

Grade Eight Proficiency Assessment

(GEPA)

TECHNICAL REPORT
March 2003 Administration

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PART 1: INTRODUCTION

This *Technical Report* is one of two companion documents that describe the technical characteristics of the New Jersey Grade Eight Proficiency Assessment (GEPA). This report provides specific test form data obtained for the March 2003 administration of the GEPA. It includes data related to test and item characteristics, reliabilities, content area and cluster correlations, and writing task/open-ended scoring rater agreement.

The companion document, the *Technical Manual*, provides information about test item development, test administration procedures, determining the proficiency levels, and equating design. It includes listings of the many reports and documents available for the GEPA.

Description of the Grade Eight Proficiency Assessment (GEPA)

The 2003 New Jersey Grade Eight Proficiency Assessment consists of three sections—Language Arts Literacy, Mathematics, and Science. The GEPA is designed to give an indication of the progress students are making in mastering the knowledge and skills described in the Core Curriculum Content Standards for these content areas.

A total of 106,479 students took the Language Arts Literacy section, 107,070 students took the Mathematics section, and 107,005 students took the Science section in March 2003. Table 1.1 shows the distribution of the total student group who scored in the three proficiency levels for Language Arts

TABLE 1.1
Total Student Group Testing in March 2003

TEST SECTION	NUMBER ¹ TESTED	PROFICIENCY LEVELS						MEAN SCALE SCORE	
		PARTIALLY PROFICIENT (100 – 199)		PROFICIENT (200 – 249)		ADVANCED PROFICIENT (250 – 300)			
		NO.	%	NO.	%	NO.	%		
LANGUAGE ARTS LITERACY									
General Education ²	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5	
Limited English Proficient ³	3,392	2,909	85.8	480	14.2	3	0.1	167.1	
Special Education ⁴	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1	
Total Students⁵	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8	
MATHEMATICS									
General Education ²	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4	
Limited English Proficient ³	3,450	2,803	81.2	524	15.2	123	3.6	181.0	
Special Education ⁴	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4	
Total Students⁵	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2	
SCIENCE									
General Education ²	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3	
Limited English Proficient ³	3,433	2,864	83.4	543	15.8	26	0.8	181.7	
Special Education ⁴	16,675	10,195	61.1	5,898	35.4	582	3.5	194.7	
Total Students⁵	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2	

¹ Excludes students' answer folders coded void.

² Excludes Special Education and Limited English Proficient students.

³ Includes Limited English Proficient students only.

⁴ Includes Special Education students only.

⁵ Includes all students. The Language Arts Literacy Total includes 130 students who are both Special Education and Limited English Proficient.

The Mathematics and Science Totals include 132 students who are both Special Education and Limited English Proficient.

Literacy, Mathematics, and Science for the March 2003 test administration. Also, the number of general education, special education, and limited English proficient students in the total student group is shown in Table 1.1.

The GEPA Language Arts Literacy, Mathematics, and Science scores are reported as scale scores with a range from 100 to 300. (NOTE: 100 and 300 are a theoretical floor and ceiling that may not actually be observed.) The scale score of 250 is the cut point between Proficient students and Advanced Proficient students. The scale score of 200 is the cut point between Proficient students and Partially Proficient students. The score ranges are as follows:

Advanced Proficient	250–300
Proficient	200–249
Partially Proficient	100–199

A series of tables summarizing the test results for the State (general education students, special education students, limited English proficient students, and total students), District Factor Groups, Special Needs Districts, and All Other (Non Special Needs) Districts appears in Appendix A. See <http://www.state.nj.us/njded/finance/> for information about District Factor Groups and Special Needs Districts (Abbott Districts).

NOTE: Percentages shown in tables through this Technical Report may not total 100 due to rounding.

GEPA Organizational Support

New Jersey Department of Education The GEPA is administered by the Office of Evaluation and Assessment within the Department of Education. The staff of the Office of Evaluation and Assessment directs the implementation of the statewide assessment programs. In addition to planning, scheduling, and directing all GEPA activities, the staff is extensively involved in numerous test review, security, and quality control procedures.

Pearson Educational Measurement (previously NCS Pearson) In 1998, the contract for developing and administering the GEPA was awarded to NCS Pearson which became Pearson Educational Measurement in 2003. Pearson Educational Measurement is the primary contractor working in partnership with Measurement Incorporated (MI) and Assessment and Evaluation Services (AES). Major Pearson Educational Measurement activities include the following:

- Supporting and monitoring the test development cycle and subcontractor efforts toward content development
- Printing test books and ancillary materials required for the GEPA
- Distributing assessment materials in a secure manner and in appropriate amounts based on the district quantity survey results
- Supporting the regional workshops that inform district test coordinators about the GEPA program
- Receiving, scanning, editing, and scoring the answer documents using clearly defined quality-control procedures
- Packaging and transporting open-ended responses to be hand-scored
- Providing accurate reports of test results to New Jersey pupils, parents/guardians, schools, districts, and the state

Measurement Incorporated (MI) MI provides item development and scores all open-ended responses for the GEPA program. Items developed include multiple-choice and constructed-response items for Language Arts Literacy, Mathematics, and Science; and writing prompts for Language Arts Literacy. MI scoring directors, New Jersey Office of Evaluation and Assessment content specialists, and New Jersey teachers use rangefinding procedures to prepare for scoring the GEPA open-ended items.

Assessment and Evaluation Services (AES) AES is responsible for GEPA technical activities such as specifying the item selection for the operational tests, equating the test forms, and developing the scale score conversion tables.

PART 2: TEST DEVELOPMENT

Validity as Related to Test Development

The New Jersey Department of Education is developing a comprehensive set of assessments that measure student achievement of the Core Curriculum Content Standards. The validity of the GEPA is therefore based on the alignment of the GEPA, the Core Curriculum Content Standards, and the knowledge and skills expected of eighth-grade students.

The *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999, p. 11-12) notes the following possible sources of validity evidence:

- Evidence based on test content
- Evidence based on response processes
- Evidence based on internal structure
- Evidence based on relations to other variables
- Evidence based on consequences of testing

For an assessment like GEPA, content validity evidence is primary. Content validity is the most relevant and important source of evidence. This section, “Part 2: Test Development,” presents validity evidence based on test content. A description of the test specification development is followed by the procedures for test item development. Details about item writing as well as task, prompt, and passage selection are included. The last section delineates the review work of the New Jersey Assessment Content Committees. Additionally, an external committee is assisting the New Jersey Department of Education by reviewing the assessments to determine how well they measure the knowledge and skills stated in the standards, and by comparing the New Jersey standards with those in other states and countries.

Part 5 of this *Technical Report* addresses validity evidence based on internal structure of the test. Item statistics and intercorrelations provide validity evidence related to internal structure.

Development of the Test Specifications

During 1997, content committees met to develop a directory of test specifications and sample items for each content area to provide content/skill outlines and sample items. These directories describe the test, format of the items, and the scores to be generated by the test. This test specification work done by New Jersey educators serves as the foundation for all test item development.

The committees of New Jersey educators rely upon their expertise and the Core Curriculum Content Standards to design a test that is universally accessible to all eighth-grade students and is composed of test questions that are age- and grade-appropriate. The material in the three directories of test specifications and sample items is designed for use by curriculum specialists and teachers to improve instruction at the district, school, and classroom levels. Figure 2.1 summarizes the steps of the test development process beginning with the development of the Core Curriculum Content Standards and ending with an operational GEPA test form. Brief descriptions of the test content measured in Language Arts Literacy, Mathematics, and Science are presented in the following sections.

Language Arts Literacy

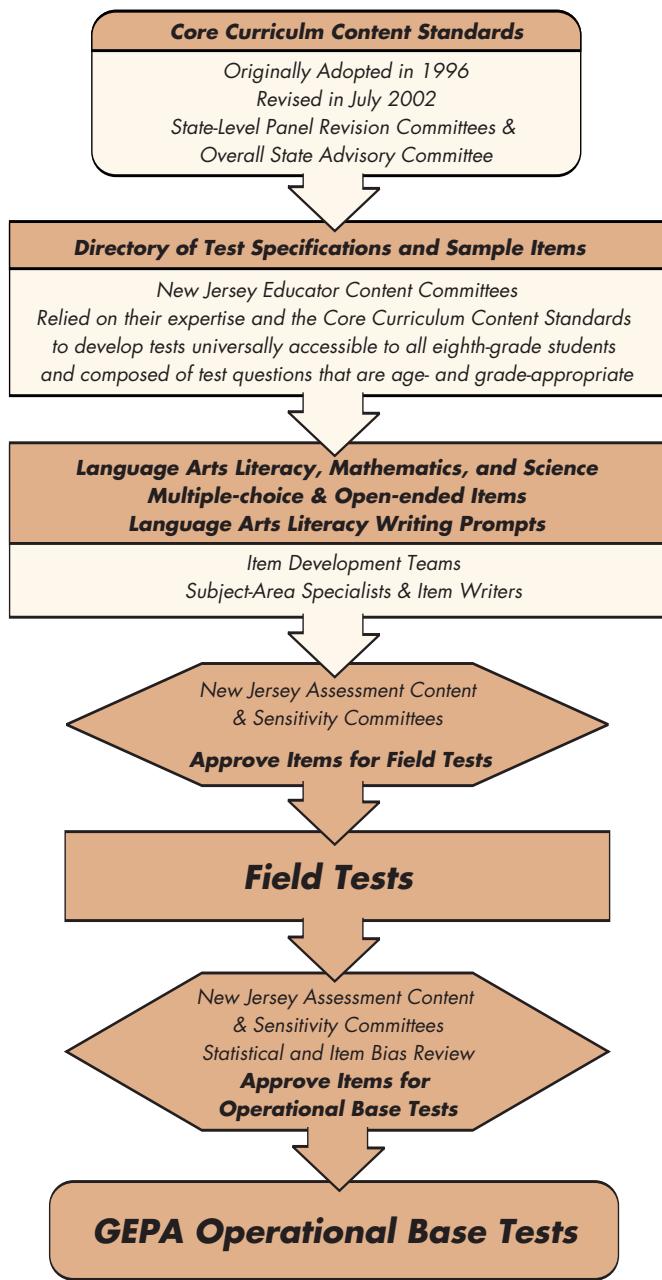
The Language Arts Literacy section of each test measures students' achievements in reading and writing. The Language Arts Literacy assessment currently assesses knowledge and skills in four content clusters:

1. Reading
2. Writing
3. Interpreting Text
4. Analyzing/Critiquing Text

The Reading cluster consists of two passages with related multiple-choice and open-ended items. The passages are selected from published sources such as books, newspapers, magazines, and the Internet.

Figure 2.1

GEPA Test Development Process



The Technical Advisory Committee (TAC) advises and assists the Office of Evaluation and Assessment in the development and implementation of the statewide testing program. TAC reviews and provides suggestions for each of the stages listed in the GEPA Test Development Process.

The Writing cluster for GEPA consists of three writing activities: a writing/persuade task in response to a prompt, a writing/speculate task in response to a picture, and a revise/edit task in response to a stimulus.

For an in-depth description of the Language Arts Literacy assessment, refer to the *Directory of Test Specifications and Sample Items for the Elementary School Proficiency Assessment (ESPA), Grade Eight Proficiency Assessment (GEPA), and High School Proficiency Assessment (HSPA) in Language Arts Literacy* (February 1998). The directory is available on-line at <http://www.njpep.org/assessment/TestSpecs/LangArts/TOC.html>, or by calling the New Jersey Department of Education, Office of Public Information, (609) 292-4041.

Mathematics

The Mathematics section of each test measures students' ability to solve problems by applying mathematical concepts. The GEPA Mathematics assessment measures knowledge and skills in four content clusters:

1. Number Sense, Concepts, and Applications
2. Spatial Sense and Geometry
3. Data Analysis, Probability, Statistics, and Discrete Mathematics
4. Patterns, Functions, and Algebra

Mathematics items are also classified and reported as Knowledge (requiring conceptual understanding or procedural knowledge) and Problem Solving. There are a total of 30 multiple-choice and 6 open-ended items in the Mathematics section. For an in-depth description of the GEPA Mathematics assessment, refer to the *Directory of Test Specifications and Sample Items for the Grade Eight Proficiency Assessment (GEPA) and the High School Proficiency Assessment (HSPA) in Mathematics* (February 1998). The directory is available on-line at <http://www.njpep.org/assessment/TestSpecs/MathTestSpec/GEPAMath/MathIndex.html>, or by

calling the New Jersey Department of Education, Office of Public Information, (609) 292-4041.

Science

The GEPA Science assessment measures knowledge and skills in three content clusters:

1. Life Science
2. Physical Science
3. Earth Science

Science items are also classified and reported as Cognitive Skills (core knowledge, systems, history of science, and uses of technology) and Process Skills (problem-solving, mathematics tools, and selecting tools). There are a total of 45 multiple-choice and 3 open-ended items in the Science section.

For an in-depth description of the Science assessment, refer to the *Directory of Test Specifications and Sample Items for the Grade Eight Proficiency Assessment (GEPA) and the High School Proficiency Assessment (HSPA) in Science, February 1998*. The directory is available on-line at http://www.njpep.org/assessment/TestSpecs/science_test_specs/Science

GEPA_HSPA/, or by calling the New Jersey Department of Education, Office of Public Information, (609) 292-4041.

The GEPA was first administered as an operational assessment in March 1999. Prior to that time, the test was administered to eighth-grade students in May 1997 and May 1998 as field tests and “due-notice” administrations. The purpose of the due-notice administrations was to help school districts identify potential gaps between their curriculum and the test objectives, and to allow schools time to modify their curriculum and instructional practices to meet the needs of students before the first operational assessment. The March 2003 GEPA consists of two types of items:

- 1) operational or base test items used to determine students' scores and
- 2) field-test items evaluated for use as future base test items.

Tables 2.1, 2.2, and 2.3 summarize the total points possible for Language Arts Literacy, Mathematics, and Science of the content areas of the operational GEPA administered in March 2003.

TABLE 2.1

Total Points Possible for the Language Arts Literacy Component of the GEPA

Language Arts Literacy	
Total	62 points
Reading	36 points*
Writing	26 points*
Writing/Speculate	6 points* 1 – 6 points, ratings averaged
Writing/Persuade	12 points* 1 – 6 points, ratings summed
Revise/Edit	8 points* 0 – 4 points, ratings summed
Interpreting Text	15 points*
Analyzing/Critiquing Text	21 points*

*Cluster-level results show how students perform on the sets of items that measure particular knowledge and skills (clusters above the dotted line) or particular processes (clusters below the dotted line). Though an item on the GEPA can contribute to a cluster above the line (for example, Reading) as well as a cluster below the line (for example, Interpreting Text), each item is counted only once in the total score.

Table 2.2
Total Points Possible for the Mathematics Component of the GEPA

Mathematics	
Total	48 points
Number Sense, Concepts, and Applications	12 points*
Spatial Sense and Geometry	12 points*
Data Analysis, Probability, Statistics, and Discrete Mathematics	12 points*
Patterns, Functions, and Algebra	12 points*
<hr/>	
Knowledge	48 points*
Problem Solving	32 points*

* Cluster-level results show how students perform on the sets of items that measure particular knowledge and skills (clusters above the dotted line) or particular processes (clusters below the dotted line). Though an item on the GEPA can contribute to a cluster above the line (for example, Spatial Sense and Geometry) as well as a cluster below the dotted line (for example, Problem Solving), each item is counted only once in the total score.

Table 2.3
Total Points Possible for the Science Component of the GEPA

Science	
Total	54 points
Life	19 points*
Physical	19 points*
Earth	16 points*
<hr/>	
Cognitive Skills	31 points*
Process Skills	23 points*

* Cluster-level results show how students perform on the sets of items that measure particular knowledge and skills (clusters above the dotted line) or particular processes (clusters below the dotted line). Though an item on the GEPA can contribute to a cluster above the line (for example, Life) as well as a cluster below the dotted line (for example, Cognitive Skills), each item is counted only once in the total score.

Development of Test Items

The March 2003 base test for Language Arts Literacy, Mathematics, and Science was composed of items field tested from March 1998 through March 2002. The item development teams consisted of subject-area specialists and consulting item writers. These writers were teachers or former teachers with a great deal of specialized knowledge (e.g., education and training, years of classroom experience, familiarity with the student population, knowledge of the content area, and understanding of the pedagogy that defines the discipline) concerning their area of content expertise.

Each of the content areas consists of multiple-choice and open-ended items. The multiple-choice items are designed to measure those skills determined to be best measured by such item types, and the open-ended items are developed to measure those skills requiring students to do more than select a correct answer. That is, the open-ended items are designed to tap more complex and integrated skills.

The Language Arts Literacy section includes a writing/persuade task, a writing/speculate task in response to a picture, and a revise/edit task. Also field tested in 1998 was a speaking component, which consisted of performance-assessment tasks. The speaking tasks were designed for local administration and scoring.

The Measurement Incorporated/Pearson Educational Measurement item development process for each testing cycle begins with a formal review of the Core Curriculum Content Standards and the three directives of test specifications. Item-writing training sessions typically last from 8 to 16 hours over two days. The respective test development specialist for each content area conducts the training session. Between the first and second sessions, preliminary versions of test items developed in the first session are evaluated. At the second session, the training is focused on the items developed in the first session.

At the training, each consulting item writer is asked to sign a Letter of Agreement. This letter specifies the confidentiality and security regulations. The agreement also outlines the ownership regulations. No confidential materials related to the project are released without explicit approval of the Office of Evaluation and Assessment.

During the training, each item writer is given the following information:

- An overview of the GEPA
- Final test blueprint for each subject-area test and item specifications
- A description of the item formats to be used, including important characteristics of each format
- A description of the item writing process and measures to take to avoid writing biased items
- A listing of the security procedures to be followed during the item development process.

Important guidelines for the GEPA item development and test structure are outlined below.

1. Items are written to reflect what students know and understand based on classroom instruction and their mastery of skills included in the Core Curriculum Content Standards. Items are also designed to assess higher-order or critical thinking skills in varied contexts that students are likely to understand; yet, they are based upon solid theoretical frameworks.
2. For each content area, the multiple-choice items represent a range of difficulty. For example, approximately 25 percent of the items are relatively easy, 50 percent of the items are somewhat difficult, and 25 percent of the items are difficult. This range of difficulty provides for a distribution of items with p-values from approximately 0.30 to 0.95. This distribution allows for a range of difficulty that supports the established proficiency levels, yet is not so difficult that low-achieving students cannot be assessed adequately.

3. Item content for all of the items, including the writing-task prompts, is carefully reviewed to ensure that the items are free from gender, racial, ethnic and regional bias. Across all subject area sections of the GEPA and in any test material presented, there is a balance of gender and active/passive roles by gender.
4. Measurement Incorporated/Pearson Educational Measurement construct initial rubrics for each open-ended item in Language Arts Literacy, Mathematics, and Science.
5. Writing task prompts for the Language Arts Literacy section are written in such a way that they focus on experiences that eighth-grade students may have every day. However, care must be taken to ensure that the writing task prompts are not intrusive in nature and do not elicit personal information of a biographical, religious, political, or affective nature. Topics must be chosen so that no group of eighth-grade students is put at a subject-related disadvantage. Instead, each writing task prompt is designed to sample the skills and abilities demanded of eighth-grade students. Each writing task is developmentally appropriate for students in both the academic and nonacademic environments.

As items are developed, Measurement Incorporated/Pearson Educational Measurement document each item's relevancy to the Core Curriculum Content Standards and to the directories of test specifications. During this process, each item is assigned a unique item ID number or coding system number. This unique number identifies the following: content area, skill measured, standard, and associated materials such as a reading passage, artwork, or display of data. The number is used to track the item throughout the development process and its eventual use on the operational base test.

All items prepared by item writers are reviewed, revised, and edited by the subject area specialists and editors prior to review by the New Jersey Assessment Content Review Committees. Also, the New Jersey Assessment Sensitivity Review Committee approves passages used on the Language Arts Literacy section.

Table 2.4 shows the number of items presented to the New Jersey Content and Sensitivity Review Committees. In preparation for the March 2003 field tests, a total of 398 Language Arts Literacy, 318 Mathematics, and 402 Science items were developed and presented to the committees.

TABLE 2.4
Number of Items Developed for the March 2003 Field Test

	Multiple-choice Items		Open-ended Items	
	Presented	Accepted	Presented	Accepted
Language Arts				
Field Test 2003	318	263	80	56
Mathematics				
Field Test 2003	234	167	84	39
Science				
Field Test 2003	366	235	36	20

Review by New Jersey Educators

Before any item is included on a field test or operational base test, it must have the approval of the New Jersey Assessment Content and Sensitivity Review Committees as well as the Office of Evaluation and Assessment.

The New Jersey Assessment Content Committee members provide expert judgments as to the alignment of each test item with the Core Curriculum Content Standards and the content-specific test specifications. Prior to field testing, all items are reviewed by the Office of Evaluation and Assessment staff, the Language Arts Literacy, Mathematics, and Science Content Committees; and the Sensitivity Committee during item review meetings. The committees review each test item to determine if the item meets test specifications and addresses an appropriate level of difficulty. Committees also ensure that test questions are not

offensive and do not reinforce negative stereotypes, and that test questions appropriately reflect multicultural society.

Figure 2.2 presents a sample of the form that must be marked “Definitely Use” or “Revise and Use With Approval” during review committee meetings before an item is included on a field test. The number of items accepted for use on the March 2003 field tests is shown in Table 2.4. A total of 319 Language Arts Literacy, 206 Mathematics, and 255 Science items were accepted by the committees.

Following field testing, the Language Arts Literacy, Mathematics, and Science Content Committees; and the Sensitivity Committee meet to review the item statistics. Pearson Educational Measurement computes item means, response frequencies, biserial correlations (with base test total scores), and other descriptive statistics. Prior to the presentation of items and statistics to reviewers, the

FIGURE 2.2
Item Approval Before Field Test

Sensitivity	Content		
*Comments	*Comments		
Sensitivity Issue	Yes	No	Meets Specifications
If yes, identify category and explain *			Appropriate Difficulty
			Accurate Coding
Definitely Use			Definitely Use
Revise and Use With Approval			Revise and Use With Approval
Revise and Resubmit			Revise and Resubmit
Do Not Use*			Do Not Use*

Sensitivity Sign-off

Date

Content Chairperson's Signature

Date

New Jersey State Department of Education defined boundaries within which item statistics should fall. In general, items with p-values below 0.30 or above 0.95 were considered to be usable only if a strong content argument could be made for their inclusion in the item bank. An item could be flagged for low or high p-value and/or low biserial correlation with base test total scores.

Also, for the statistical item review, the Mantel-Haenszel statistic is calculated to show whether or not students are responding to an item in a way that their overall ability (as measured by the base test) would lead us to expect. This statistic allows the committees to examine group membership (by race

or by gender) and ability. The Mantel-Haenszel statistic is used for a classification determination of category A, B, or C. An item in Category A shows no or minor relationship between group membership and performance. Category B items are somewhat suspect. Category C items show a substantial relationship between group membership and item performance and must be examined carefully by the committees to make sure these items are not biased.

Figure 2.3 presents a sample of the form that must be marked “Definitely Use” or “Revise and Use With Approval” during review committee meetings of the field-test statistics before an item is included on an operational base test.

FIGURE 2.3
Item Approval Before Operational Base Test

Sensitivity	Content	
*Comments	*Comments	
Sensitivity Issue If yes, identify category and explain*	<input type="checkbox"/> Yes <input type="checkbox"/> No	Appropriate Difficulty <i>PVal =</i> <i>Biserial =</i>
Mantel-Haenszel Category C <input type="checkbox"/> W-AA <input type="checkbox"/> W-H <input type="checkbox"/> M-F		
<input type="checkbox"/> Yes <input type="checkbox"/> No	Definitely Use	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Yes <input type="checkbox"/> No	Revise and Use With Approval**	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Yes <input type="checkbox"/> No	Revise and Re-Field Test	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Yes <input type="checkbox"/> No	Do Not Use*	<input type="checkbox"/> Yes <input type="checkbox"/> No

Sensitivity Sign-off
**Requires director's approval

Date

Content Chairperson's Signature

Date

Tables 2.5, 2.6, and 2.7 present the number of items field-tested during the March 2003 Language Arts Literacy, Mathematics, and Science administration. Table 2.5 shows that 160 multiple-choice items and 32 open-ended items were field tested for four narrative passages and four persuasive passages in reading. No open-ended items were approved for one of the persuasive passages so this passage cannot be included in an operational base test.

For the Writing component of Language Arts Literacy, four revise/edit tasks were field-tested. Two of the four revise/edit tasks were approved for use on an operational test. No writing/persuade tasks in response to a prompt or writing/speculate tasks in response to a picture were field tested in March 2003.

Table 2.6 reports that 159 multiple-choice Mathematics items and 38 open-ended Mathematics items were field tested in March 2003. The number

of Mathematics items field-tested for each content cluster is shown in the table. Each content cluster is further divided into macros. The macros are listed in the *Directory of Test Specifications and Sample Items for the Grade Eight Proficiency Assessment (GEPA) and the High School Proficiency Assessment (HSPA) in Mathematics* (February 1998).

Table 2.6 indicates that 65.4% Mathematics multiple-choice items and 23.7% Mathematics open-ended items were approved for an operational base test.

Table 2.7 shows that 224 multiple-choice Science items and 15 open-ended Science items were field-tested in March 2003. Also, Table 2.7 indicates that 81.3% Science multiple-choice items and 46.7% Science open-ended items were approved for an operational base test. The number of Science items field-tested for each content area as well as by cognitive skill and process skill is shown in the table.

TABLE 2.5

LANGUAGE ARTS LITERACY - READING
Number of Field-Test Items Accepted During Statistical Review

Passages	Presented		Accepted		Revise & Re-Field Test		Do Not Use	
	MC	OE	MC	OE	MC	OE	MC	OE
Narrative 1	20	4	16	2	0	0	4	2
Narrative 2	20	4	17	3	0	0	3	1
Narrative 3	20	4	14	2	0	0	6	2
Narrative 4	20	4	15	3	0	0	5	1
Persuasive 1	20	4	13	2	0	0	7	2
Persuasive 2*	20	4	16	0	0	0	4	4
Persuasive 3	20	4	18	3	0	0	2	1
Persuasive 4	20	4	15	3	0	0	5	1
TOTAL	160	32	124	18	0	0	36	14

* No open-ended items were approved for this persuasive passage so this passage cannot be included in an operational base test.

TABLE 2.6**MATHEMATICS****Number of Field-Test Items Approved During Statistical Review**

Content Cluster	Macro	Field-Tested		Approved		Revise & Re-Field Test		Do Not Use	
		MC	OE	MC	OE	MC	OE	MC	OE
Number Sense, Concepts and Applications	A	16	0	12	0	3	0	1	0
	B	15	0	10	0	1	0	4	0
	C	11	6	8	0	1	5	2	1
Spatial Sense and Geometry	A	15	2	9	0	0	0	6	2
	B	23	0	17	0	0	0	6	0
	C	13	6	7	0	2	1	4	5
Data Analysis, Probability, Statistics, and Discrete Mathematics	A	6	1	1	1	0	0	5	0
	B	9	2	7	0	1	1	1	1
	C	14	4	8	2	0	0	6	2
	D	12	3	5	0	2	1	5	2
Patterns, Functions, and Algebra	A	15	4	12	4	0	0	3	0
	B	10	2	8	2	2	0	0	0
TOTAL		159	38*	104	9	12	8	43	21*

* Eight open-ended items were rejected during rangefinding.
These items were not scored so no field-test statistics were produced.

TABLE 2.7**SCIENCE****Number of Field-Test Items Approved During Statistical Review**

Content Skill	Field-Tested		Approved		Revise & Re-Field Test		Do Not Use	
	MC	OE	MC	OE	MC	OE	MC	OE
Life								
Cognitive	40	2	34	1	3	0	3	1
Process	29	5	23	1	0	1	6	3
Physical								
Cognitive	39	0	30	0	2	0	7	0
Process	42	2	36	2	4	0	2	0
Earth								
Cognitive	49	3	35	2	5	1	9	0
Process	25	3	24	1	1	1	0	1
TOTAL	224	15	182	7	15	3	27	5

PART 3: SCALE SCORES

The individual student GEPA Language Arts Literacy, Mathematics, and Science scores are reported as scale scores with a range of 100 to 300. The scores 100 and 300 are a floor and ceiling and may not actually be observed. The scale score of 250 is the cutscore between Proficient students and Advanced Proficient students. The scale score of 200 is the cutscore between Proficient students and Partially Proficient students. The score ranges are as follows:

Advanced Proficient	250-300
Proficient	200-249
Partially Proficient	100-199

A proficiency-level-setting or standard-setting study was conducted June 8-11, 1999, to describe and delineate the thresholds of performance for Language Arts Literacy and Mathematics that are indicative of Partially Proficient, Proficient, and Advanced Proficient performance. A proficiency-level-setting study for Science was conducted July 10-12, 2000. Results of these studies were used to formulate recommendations to the Commissioner and the New Jersey Board of Education for adoption of the proficiency levels.

Table 3.1 presents the number correct cutscores derived during the proficiency-level studies for the

TABLE 3.1

**Proficiency-Level Raw Cutscores
Derived During Proficiency-Level Study**

	PROFICIENT	ADVANCED PROFICIENT
LANGUAGE ARTS LITERACY (62 points max.)	29.5	44.5
MATHEMATICS (48 points max.)	24.0	43.0
SCIENCE (52 points max.)	24.0	40.0

Language Arts and Mathematics administrations in March 1999 and the Science administration in March 2000.

The Partial Credit Model (PCM) is used for scaling and equating the GEPA operational tests. Masters and Wright (1997) provide this description of the Partial Credit Model:

The Partial Credit Model (PCM) is a unidimensional model for the analysis of responses recorded in two or more ordered categories....it belongs to the Rasch family of models and so shares the distinguishing characteristics of that family: separable person and item parameters, sufficient statistics, and, hence, conjoint additivity. These features enable "specifically objective" comparisons of persons and items (Rasch, 1977) and allow each set of model parameters to be conditioned out of the estimation procedure for the other.

The PCM (Masters, 1982, 1987, 1988a, 1988b) is the simplest of all item response models for ordered categories. It contains only two sets of parameters: one for persons and one for items. All parameters in the model are *locations* on an underlying variable. (p. 101)

BIGSTEPS was used to provide the Rasch analyses used for generating the item and student statistics.

Raw score to scale score conversion tables for Language Arts Literacy (LAL), Mathematics, and Science are shown in Appendix B. Also, large-print and Braille raw score to scale score conversion tables are included for tests in which not all items could be properly enlarged or transcribed. New scoring tables were prepared with the remaining items on the large-print and Braille test forms. In addition, a special equating was required for a breach form of the Language Arts Literacy section. The raw score to scale score conversion table for the breach form of the Language Arts Literacy is also included in Appendix B. Appendix C shows Language Arts Literacy, Mathematics, and Science scale score frequency distributions.

Equating designs must take into account the form of the assessment. Two equating designs are used for the GEPA test forms. The Mathematics and Science sections are equated using a common anchor item, non-equivalent group, design in which all students take common items. These common items are selected to be representative of the total test form in terms of content, difficulty, and format.

The structure of the Language Arts Literacy section does not allow for a subset of common exercises to be selected for use across test administrations because the smallest item exercises are unique and singular. Even in the Reading Comprehension part, which is divided into two passage types, these two types cannot be thought of as representative of one another. The Language Arts Literacy equating is accomplished using an embedded equating/field-test section that is used for common-person equating.

Mathematics and Science Equating Design

Common-item equating is used to determine form equivalence from one form, or test administration year, to the next. A set of common anchor items from the 2002 Mathematics and Science operational tests were embedded in the operational form (base test) for the 2003 tests. Each student participating in the Mathematics and Science testing took the set of common anchor items, and these items contributed to the student's total score.

For both the Mathematics and Science sections, multiple-choice items and open-ended items were selected from the 2002 operational tests to serve as the common anchor items to be embedded in the 2003 operational tests. To the maximum extent possible, these items were selected to be proportionally representative of the content and statistics of the total test forms. In addition, the anchor items occupied similar locations in the 2002 and 2003 test forms. These sets of anchor items (14 items with a total of 18 points in Mathematics and 13 items with a total of 15 points in Science) represent approximately one-third of the Mathematics and Science operational tests in terms of number of items and number of points.

Procedures for the 2002 Operational Mathematics and Science Tests: The following procedures were used for calibrating and scaling the 2002 operational tests. The two steps involved in the calibration were identical for Mathematics and Science.

Step 1. Calibrate the spring 2002 test form using the Partial Credit Model (PCM). Calibrating the spring 2002 test form using the PCM produced two valuable components. First, it provided estimated item parameters for both the multiple-choice and open-ended items, and second, it produced a raw score to ability table.

Step 2. Develop an ability to scale score table for spring 2002 calibration. The raw-to-scale score relationship was defined as a result of standard setting, with the Proficient and Advanced Proficient cutscores anchoring the score scale at 200 and 250, respectively. Using a linear transformation based on the raw-to-scale score relationship established by the standard setting cutscores, the score scale was fully developed. The scale score to ability table was found by assigning a scale score to each ability estimate based on the raw score to ability relationship resulting from the calibration. Applying this procedure to each of the raw scores produced a raw-score-to-ability-to-scale-score table for each test. This table contained the raw cutscores established during the standard setting as well as the corresponding ability estimates to which test scores can be equated from year to year.

Procedures for the 2003 Operational Mathematics and Science Tests: The following steps were applied to the spring 2003 test administration:

Step 1. Calibrate the spring 2003 test items using the Partial Credit Model and fix the item difficulties to their estimated values based on the spring 2002 calibration, i.e., the item bank values. A common set of items is used. The item difficulties for the common test items on the spring 2003 test were fixed to the estimated item difficulties from the calibration

of the spring 2002 operational test. This placed all parameter estimates for the spring 2003 calibration on the 2002 scale. This also produced the new raw score to ability table for the 2003 operational test.

Step 2. Develop a raw score to scale score table for the spring 2003 assessments. Using the ability to scale score relationship found in Step 2 of the 2002 operational test calibrations, scale scores were assigned to the raw scores from the spring 2003 assessments. This is possible because each ability in the ability to scale score table corresponds to a single raw score; therefore, the scale score assigned to that ability can also be assigned to the raw score.

The final product from the equating procedure was the raw score to scale score table developed in Step 2. When equating was completed, raw score to scale score conversion tables were available for scoring. These two steps can be applied to the spring 2004 assessments.

Common-Item Anchors: Checks during the equating process were necessary to establish the stability of the common items and determine model fit. One such check was accomplished through the use of the common anchor items from the 2002 operational test embedded in the 2003 operational test. A plot showing the item difficulties derived from the spring 2002 analysis plotted against the spring 2003 analysis should form a straight line if the items are functioning similarly in the two tests. The degree to which these plots form a straight line and the proportion of items considered outliers impact decisions about the quality of the equating and the appropriateness of applying standards.

Procedure:

1. Calibrate the current year's operational items (for mathematics or science) in a single run using BIG-STEPS. This run produces an item parameter file of all unadjusted (NEW) item calibration values.

2. Create a plot of NEW item parameter estimates vs. OLD item parameter estimates (bank values) for the set of common/linking items. Visually inspect the plot for visible outliers and examine the resulting item parameter output file to ensure that each common/linking item displays acceptable properties of item fit.
3. Compute the mean and standard deviation of the set of linking items from the NEW unadjusted item calibration file of Step 1 above.
4. Compute the mean and standard deviation for the set of linking items from the OLD annotated item anchor file. Compare the results.

In general, items with displacement (i.e., the difference between the item difficulty estimates for the NEW and OLD calibrations) greater than 0.30 logits should be further reviewed and considered for dropping from the common-item link. In addition, items displaying mean-square infit less than 0.70 or greater than 1.30 in the NEW calibration should be further reviewed and considered for dropping from the common-item link.

Language Arts Literacy Equating Design

Scaling and equating for Language Arts Literacy was accomplished through a different design. Each assessment has an embedded equating/field test section that is used for either common-item equating or new-item field testing. Language Arts Literacy was equated using a design in which 2003 operational items appeared in a section designated for equating or field-testing.

Year 2003 test included the operational base test and four equating sections. Students across the state took one of the equating sections or a field test section. Sampling was done by school and stratified by District Factor Grouping to approximate equivalent groups between equating sets. The sample size for each equating/field test form was approximately 4,500 students, or 4–5 percent of the student examinee population.

Procedures for the 2002 Operational Language Arts Literacy Test:

The following procedures were used for scaling the 2002 operational tests.

Step 1. Establish raw score equivalents based on the 2001/2002 reading passages. Using the common item data from each of the Passage A and Passage B embedded equating forms, BIGSTEPS calibrations were run to determine the item difficulties and step category values. Calibrations were run separately and concurrently for the Passage A and Passage B forms. Item parameters on the operational 2002 form were expressed in terms of the 2001 item parameters, which, in turn, lead to the original raw score to ability (theta) conversions.

Step 2. Establish raw score equivalents for the 2001/2002 reading passages. Using the common item data from each of the Passage A and Passage B embedded equating forms, BIGSTEPS calibrations were run to determine the item difficulties and step category values. Calibrations were run separately and concurrently for different combinations of pretest forms. Item parameters on the 2002 passages were expressed in terms of the 2001 item parameters, which in turn, lead to the original raw score to ability (theta) estimate conversions. These equivalencies were used in the pre-equating of 2002 forms to the base scale.

Step 3. Develop a raw score to scale score table for the 2002 assessment. On the basis of the 2002 raw to scale score table developed during 2001 and the 2001/2002 raw score equivalency table developed in Step 1, a 2002 raw score to scale score table was generated.

Procedures for the 2003 Operational Language Arts Literacy Test:

The following procedures were used for scaling the 2003 operational tests.

Step 1. Establish raw score equivalents based on the 2002/2003 reading passages. Using the common item data from each of the Passage A and Passage B embedded equating forms, BIGSTEPS calibrations were run to determine the item difficulties and step category values. Calibrations were run separately and concurrently for the Passage A and Passage B forms. Item parameters on the operational 2003 form were expressed in terms of the 2002 item parameters, which, in turn, lead to the original raw score to ability (theta) conversions.

Step 2. Establish raw score equivalents for the 2002/2003 reading passages. Using the common item data from each of the Passage A and Passage B embedded equating forms, BIGSTEPS calibrations were run to determine the item difficulties and step category values. Calibrations were run separately and concurrently for different combinations of pretest forms. Item parameters on the 2003 passages were expressed in terms of the 2002 item parameters, which in turn, lead to the original raw score to ability (theta) estimate conversions. These equivalencies were used in the pre-equating of 2003 forms to the base scale.

Step 3. Develop a raw score to scale score table for the 2003 assessment. On the basis of the 2003 raw to scale score table developed during 2002 and the 2002/2003 raw score equivalency table developed in Step 1, a 2003 raw score to scale score table was generated.

PART 4: TEST STATISTICS

Summary Statistics

Means and standard deviations of students' raw scores on each test content area are given in Table 4.1 for the March 2003 test. The data are based on the total Grade 8 student population described in Part 1 and Appendix A. Table 4.1 shows students' mean raw scores were 33.6 of 62 points for Language Arts Literacy, 26.1 of 48 points for Mathematics, and 29.1 of 54 points for Science. The table also shows that the raw score standard deviations were 8.8 for Language Arts Literacy, 10.7 for Mathematics, and 10.2 for Science. Raw score to scale score conversion tables by test section appear in Appendix C. Also, frequency distributions of the scale scores are included in Appendix C.

Statistics for 106,479 Language Arts Literacy students, 107,070 Mathematics students, and 107,005 Science students are printed in Table 1.1. Also, these are shown as the State Totals on the Cycle II reports included in Appendix A. Statistics printed in Part 4 and Part 5 of this *Technical Report* are for 106,272 Language Arts Literacy students, 107,063 Mathematics students, and 106,677

Science students. The differences in these numbers of students are as follows:

- Due to a security breach, an alternate Language Arts Literacy test form was administered to 86 students in two schools in one district. Also, due to a security breach, an alternate Science test form was administered to 203 students in another school and district.
- Large-print and Braille test forms differ from the standard test form. If items based on graphs, charts, and illustrations cannot be enlarged or translated satisfactorily, these items are eliminated from these forms. Since these forms have fewer test questions, new raw score to scale score conversion tables are required. Seven students took the Braille form of the Language Arts Literacy, Mathematics, and Science. A large-print form was administered to 114 Language Arts Literacy students and 118 Science students. All items were included in the Mathematics large-print form.

TABLE 4.1

Means and Standard Deviations of Students' GEPA Raw Scores by Content Areas

March 2003

GEPA Test Section	Number of Points	Mean	Standard Deviation	Number Tested
Language Arts Literacy	62	33.6	8.8	106,272
Mathematics	48	26.1	10.7	107,063
Science	54	29.1	10.2	106,677

Table 4.2 reports the means and standard deviations for students' obtained numbers of raw score points by content areas and clusters on the March 2003 test. In Language Arts Literacy, students' mean percent correct is 54.2% overall with 57.5% in Reading and 49.6% in Writing. The mean percent correct in the two Reading clusters—Interpreting Text and Analyzing/Critiquing Text—are 66.2% and 51.2%, respectively. The mean raw score on the writing/speculate task is 3.59 points of a possible 6 points, the mean raw score on the writing/persuade task was 6.83 points of a possible 12 points, and the mean raw score on the revise/edit is 2.46 points of a possible 8 points.

With respect to the students' performance scores on the Mathematics content clusters, the data in Table 4.2 indicate that the mean percent correct ranged from 49.8% in Spatial Sense and Geometry to 60.4% in Patterns, Functions, and Algebra. The mathematics items are also categorized as Knowledge (requiring conceptual understanding and procedural knowledge) and Problem Solving. The mean percent correct is 54.3% for Knowledge and 53.8% for Problem Solving.

Table 4.2 also includes the means and standard deviations for students' scores in Science. For the content clusters, the mean percent correct range from 53.0% in Earth Science to 53.1% in Physical Science to 55.3% in Life Science. Science items are also categorized as Cognitive Skills with a mean percent correct of 50.1% and Process Skills with a mean percent correct of 58.9%.

Table 4.3 shows the means and standard deviations for the students' raw scores on the multiple-choice items by content area and cluster.

Table 4.4 provides means and standard deviations for students' raw scores and percent correct scores on the writing tasks and open-ended items by cluster.

TABLE 4.2

**Means and Standard Deviations of Students' Raw Scores
and Percent Correct by GEPA Content Areas and Clusters**

March 2003

GEPA Content Area	Number of Items		Number Of Possible Points	Raw Score		Percent Correct (Raw Score)	
	Multiple- Choice	Writing Tasks & Open- Ended		Mean	Standard Deviation	Mean	Standard Deviation
Language Arts Literacy	20	7	62	33.58	8.83	54.2	14.2
Reading	20	4	36	20.69	5.61	57.5	15.6
Writing	-	3	26	12.88	3.72	49.6	14.3
Writing/Speculate	-	1	6	3.59	0.80	59.8	13.3
Writing/Persuade	-	1	12	6.83	1.87	56.9	15.6
Revise/Edit	-	1	8	2.46	1.61	30.8	20.2
Interpreting Text	11	1	15	9.93	2.75	66.2	18.3
Analyzing/Critiquing Text	9	3	21	10.76	3.19	51.2	15.2
Mathematics	30	6	48	26.05	10.74	54.3	22.4
Number Sense, Concepts, and Applications	6	2	12	6.12	3.32	51.0	27.6
Spatial Sense and Geometry	9	1	12	5.97	3.06	49.8	25.5
Data Analysis, Probability, Statistics, and Discrete Mathematics	6	2	12	6.71	2.84	55.9	23.7
Patterns, Functions, & Algebra	9	1	12	7.25	2.89	60.4	24.1
Knowledge	30	6	48	26.05	10.74	54.3	22.4
Problem Solving	17	5	32	17.23	7.65	53.8	23.9
Science	45	3	54	29.07	10.17	53.8	18.8
Life	16	1	19	10.51	3.96	55.3	20.8
Physical	16	1	19	10.08	3.71	53.1	19.5
Earth	13	1	16	8.48	3.55	53.0	22.2
Cognitive Skills	22	3	31	15.53	6.23	50.1	20.1
Process Skills	23	-	23	13.55	4.48	58.9	19.5

TABLE 4.3

**Means and Standard Deviations of Students' Raw Scores
and Percent Correct on Multiple-Choice Items by GEPA Content
Areas and Clusters**

March 2003

GEPA Content Area	Number of Items	Raw Score		Percent Correct (Raw Score)	
		Mean	Standard Deviation	Mean	Standard Deviation
Language Arts Literacy	20	14.47	3.93	72.4	19.6
Reading	20	14.47	3.93	72.4	19.6
Writing	-	-	-	-	-
Writing/Speculate	-	-	-	-	-
Writing/Persuade	-	-	-	-	-
Revise/Edit	-	-	-	-	-
Interpreting Text	11	8.23	2.33	74.8	21.1
Analyzing/Critiquing Text	9	6.25	1.97	69.4	21.9
Mathematics	30	18.13	6.25	60.4	20.8
Number Sense, Concepts, and Applications	6	3.80	1.59	63.3	26.5
Spatial Sense and Geometry	9	4.71	2.24	52.3	24.9
Data Analysis, Probability, Statistics, and Discrete Mathematics	6	4.13	1.55	68.8	25.8
Patterns, Functions, & Algebra	9	5.49	2.17	61.0	24.1
Knowledge	30	18.13	6.25	60.4	20.8
Problem Solving	17	11.05	3.82	65.0	22.5
Science	45	25.36	8.26	56.4	18.4
Life	16	9.33	3.30	58.3	20.7
Physical	16	9.03	3.17	56.4	19.8
Earth	13	7.00	2.84	53.9	21.8
Cognitive Skills	22	11.81	4.32	53.7	19.6
Process Skills	23	13.55	4.48	58.9	19.5

TABLE 4.4

**Means and Standard Deviations of Students' Raw Scores
and Percent Correct on the Writing Tasks and Open-Ended Items
by GEPA Content Areas and Clusters**

March 2003

GEPA Content Area	Number		Raw Score		Percent Correct (Raw Score)	
	Items	Points	Mean	Standard Deviation	Mean	Standard Deviation
Language Arts Literacy	7	42	19.11	5.59	45.5	13.3
Reading	4	16	6.22	2.19	38.9	13.7
Writing	3	26	12.88	3.72	49.6	14.3
Writing/Speculate	1	6	3.59	0.80	59.8	13.3
Writing/Persuade	1	12	6.83	1.87	56.9	15.6
Revise/Edit	1	8	2.46	1.61	30.8	20.2
Interpreting Text	1	4	1.71	0.66	42.7	16.6
Analyzing/Critiquing Text	3	12	4.51	1.66	37.6	13.8
Mathematics	6	18	7.93	5.02	44.0	27.9
Number Sense, Concepts, and Applications	2	6	2.33	2.13	38.8	35.4
Spatial Sense and Geometry	1	3	1.27	1.16	42.2	38.8
Data Analysis, Probability, Statistics, and Discrete Mathematics	2	6	2.58	1.69	43.0	28.2
Patterns, Functions, & Algebra	1	3	1.76	1.05	58.6	35.0
Knowledge	6	18	7.93	5.02	44.0	27.9
Problem Solving	5	15	6.19	4.30	41.2	28.7
Science	3	9	3.72	2.39	41.3	26.6
Life	1	3	1.18	1.00	39.4	33.4
Physical	1	3	1.06	0.91	35.2	30.4
Earth	1	3	1.47	1.11	49.2	37.1
Cognitive Skills	3	9	3.71	2.39	41.3	26.6
Process Skills	-	-	-	-	-	-

Reliability of the Test Scores

Table 4.5 summarizes reliability estimates for the GEPA content areas and clusters. The reliability coefficients given in this table are based on Cronbach's coefficient alpha measure of internal consistency. Cronbach's alpha is used on tests containing items that can be scored along a range of values. The standard errors of measurement (SEMs) for the major content areas—Language Arts Literacy, Mathematics, and Science—are expressed in terms of the raw score metric and the scale score metric. The GEPA scale scores range from 100 to 300.

Kuder-Richardson Formula 20 (KR-20) and SEMs for the dichotomously scored items in each cluster are reported in Table 4.6.

When evaluating these results, it is important to recall that reliability is partially a function of test length. Therefore, the reliability of a content area is likely to be greater than the reliability of a cluster simply because the content area has more items. Similarly, clusters with more items are likely to be more reliable than clusters with fewer items. The data provided in Tables 4.5 and 4.6 reflect the expected positive relationship between test length and reliability.

The SEMs given in Tables 4.5 and 4.6 are useful when interpreting students' scores. Measurement error occurs in every test. A student's true score is a hypothetical average score that the student would obtain if a test were repeatedly administered to the student without the effects of instruction, practice, or fatigue. Mehrens and Lehmann (1991) suggest this use of the SEM:

The standard error measurement is often used for what is called band interpretation. Band interpretation helps convey the idea of imprecision of measurement...If we assume that the errors are random, an individual's observed scores will be normally distributed about his true score over repeated testing. Thus, one can say that a person's observed score will lie between $\pm 1Se$ of his true score approximately 68 percent of the time, or $\pm 2Se$ of his true score about 95 percent of the time. (p. 252)

TABLE 4.5

**Reliability Estimates and Standard Errors of Measurement (SEMs) for
GEPA Language Arts Literacy, Mathematics, and Science**

March 2003

GEPA Test Section	Number of Points	Reliability Cronbach's alpha	Raw Score SEM	Scale Score SEM
Language Arts Literacy	62	.88	3.08	12.43
Reading	36	.87	2.04	-
Writing	26	.77	1.78	-
Interpreting Text	15	.91	0.83	-
Analyzing/Critiquing Text	21	.97	0.60	-
Mathematics	48	.90	3.32	13.02
Number Sense, Concepts, and Applications	12	.73	1.73	-
Spatial Sense and Geometry	12	.69	1.71	-
Data Analysis, Probability, Statistics, and Discrete Mathematics	12	.68	1.60	-
Patterns, Functions, & Algebra	12	.70	1.58	-
Knowledge	48	.90	3.32	-
Problem Solving	32	.88	2.70	-
Science	54	.89	3.38	10.80
Life	19	.75	1.98	-
Physical	19	.71	1.98	-
Earth	16	.71	1.90	-
Cognitive Skills	31	.82	2.61	-
Process Skills	23	.77	2.15	-

TABLE 4.6

Kuder-Richardson 20 Reliability Estimates and Standard Errors of Measurement (SEMs) for Dichotomously Scored Items Within GEPA Content Clusters

March 2003

GEPA Content Area	Number of Items	Reliability KR-20	SEM
Language Arts Literacy	20	.81	1.73
Reading	20	.81	1.73
Writing*	-	-	-
Writing/Speculate	-	-	-
Writing/Persuade	-	-	-
Revise/Edit	-	-	-
Interpreting Text	11	.73	1.22
Analyzing/Critiquing Text	9	.61	1.22
Mathematics	30	.86	2.38
Number Sense, Concepts, and Applications	6	.56	1.05
Spatial Sense and Geometry	9	.63	1.36
Data Analysis, Probability, Statistics, and Discrete Mathematics	6	.57	1.01
Patterns, Functions, & Algebra	9	.65	1.28
Knowledge	30	.86	2.38
Problem Solving	17	.80	1.71
Science	45	.87	3.00
Life	16	.72	1.76
Physical	16	.68	1.80
Earth	13	.68	1.61
Cognitive Skills	22	.77	2.09
Process Skills	23	.77	2.15

* There were no dichotomously scored writing items.

Agreement Between Raters for the Writing Tasks and Open-Ended Items

Table 4.7 shows the percentages of writing tasks and open-ended items scored with exact agreement, adjacent agreement, and resolution needed.

The Writing cluster within Language Arts Literacy consists of three writing activities:

- writing/speculate task in response to a picture —
1 – 6 points, ratings averaged
- writing/persuade task —
1 – 6 points, ratings summed
- revise/edit —
0 – 4 points, ratings summed

Each writing task is rated by two independent raters. Of the 340,000+ task responses in March 2003, 62.4% received exactly the same scores by the raters and 34.9% received scores that were adjacent. Thus, approximately 97.3% of the task responses required only two raters. The remaining 2.7% received scores on the Writing Tasks that differed by more than one point and, therefore, required a third rater.

Reading, Mathematics, and Science included open-ended items. For the Reading open-ended items, the rubric used by the raters had score points that ranged from 0 to 4. Two Reading open-ended items are presented for each of two reading passages. For these four items, the resolution percent ranged from 0.9% to 1.2% with the percent at perfect agreement ranging from 65.7% to 67.8%.

Six open-ended items were presented for Mathematics. These six items had percents at perfect agreement ranging from 79.7% to 89.8%. The percent requiring resolution ranged from 0.3% to 2.1%.

Three open-ended items were included for Science. These items had a perfect agreement rate ranging from 65.2% to 79.1%. The percent requiring resolution ranged from 2.1% to 3.7%.

TABLE 4.7

**Consistency Between Raters Scoring
GEPA Writing Tasks and Open-Ended Items**

March 2003

GEPA Writing Tasks and Open-Ended Items		Percent Raters In Exact Agreement	Percent Raters In Adjacent Agreement	Resolution Needed
Language Arts Literacy				
Writing	Total	62.4	34.9	2.7
Writing/Speculate		65.8	33.1	1.1
Writing/Persuade		61.6	36.1	2.2
Revise/Edit		59.7	35.5	4.8
Reading	Total	66.5	32.5	1.0
Open-Ended Item 1		66.6	32.5	0.9
Open-Ended Item 2		65.7	33.2	1.2
Open-Ended Item 3		65.7	33.3	1.0
Open-Ended Item 4		67.8	31.1	1.0
Mathematics				
Mathematics	Total	86.2	12.9	1.0
Open-Ended Item 11		88.9	10.3	0.8
Open-Ended Item 12		85.3	13.9	0.8
Open-Ended Item 23		87.0	11.9	1.1
Open-Ended Item 24		79.7	18.2	2.1
Open-Ended Item 35		89.8	9.9	0.3
Open-Ended Item 36		86.2	12.9	0.9
Science				
Science	Total	72.5	24.7	2.8
Open-Ended Item 1		79.1	18.8	2.1
Open-Ended Item 2		65.2	31.0	3.7
Open-Ended Item 3		73.2	24.3	2.5

PART 5: ITEM-LEVEL STATISTICS

The GEPA test specifications are aligned with the Core Curriculum Content Standards. Please refer to the *Technical Manual* and Part 2 of this *Technical Report* for information about the test specifications and test development.

Classical Item Statistics

In Table 5.1, summary statistics are given that describe the difficulty and discrimination of the items comprising each cluster. For dichotomously scored items, means and standard deviations of proportion-correct values (p-values) and point-biserials are given. For the open-ended items, the index of item difficulty is calculated by dividing students' average score on an item by the maximum possible score on the item. Item discrimination for each open-ended item is the correlation between students' item score and their total score on the test section. For both the item-test correlation and the point-biserial correlation, students' total test scores are expressed in terms of the raw score metric.

Frequency distributions of the March 2003 GEPA item p-values (difficulty values) and item discrimination indices are provided by content section and cluster for Language Arts Literacy, Mathematics, and Science in Tables 5.2, 5.3, and 5.4 respectively. The top section of each table shows the distribution of item difficulty values; the bottom section shows the distribution of point-biserial indices.

Point-biserial indices are produced for the operational base test items. Millman and Greene (1989) note that the point-biserial index gives a true reflection of the item's contribution to the functioning of the test. For field-test item review described in "Part 2: Test Development," biserial indices are computed. The biserial indices tend to be more stable across samples.

Speededness

The amount of time allotted for students to complete the GEPA is intended to provide nearly all students with sufficient time to answer all the questions. Table 5.5 presents data concerning the extent to which this intent was met. For the Reading cluster, and the Mathematics and Science content areas, all parts end with the open-ended items. For this reason, Table 5.5 shows the percentage of students omitting each of the last three multiple-choice items in each part and all open-ended items.

Table 5.5 shows the percent of students omitting the Reading multiple-choice items is very small, at about 0.2%. The percent of students omitting the open-ended items varies from 2.0% to 4.5%.

The percent of students omitting the Mathematics multiple-choice items ranges from 0.2% to 0.5%. The percent of students omitting the Mathematics open-ended items varies from 2.6% to 8.7%.

The percent of students omitting the Science multiple-choice items ranges from 0.3% to 1.3%. The percent of students omitting the Science open-ended items varies from 2.9% to 3.9%.

Overall, these data indicate that the amount of time provided for completing the GEPA is appropriate and that speed of response is not a factor that affects students' performances or detracts from the validity of GEPA scores.

TABLE 5.1

**Item Difficulty and Discrimination Summary Statistics
for Dichotomously Scored and Open-Ended Items
by GEPA Test Section and Cluster**

March 2003

GEPA Test Section/Cluster	Dichotomous			Open Ended		
	Item Difficulty		Item Discrimination	Item Difficulty		Item Discrimination
	Mean	S.D.	Mean	Mean	S.D.	Mean
Language Arts Literacy	.72	.14	.46	.45	.13	-
Reading	.72	.14	.46	.39	.14	.86
Writing	-	-	-	.50	.14	.92
Writing/Speculate	-	-	-	.60	.13	.78
Writing/Persuade	-	-	-	.57	.16	.84
Revise/Edit	-	-	-	.31	.20	.75
Interpreting Text	.75	.15	.47	.43	.17	.76
Analyzing/Critiquing Text	.69	.14	.43	.38	.14	.84
Mathematics	.60	.12	.42	.44	.28	.94
Number Sense, Concepts, and Applications	.63	.10	.44	.39	.35	.83
Spatial Sense and Geometry	.52	.08	.40	.42	.39	.76
Data Analysis, Probability, Statistics, and Discrete Mathematics	.69	.08	.43	.43	.28	.78
Patterns, Functions, & Algebra	.61	.14	.43	.59	.35	.72
Knowledge	.60	.12	.42	.44	.28	.94
Problem Solving	.65	.12	.45	.41	.29	.93
Science	.56	.13	.38	.41	.27	.84
Life	.58	.14	.39	.39	.33	.69
Physical	.56	.13	.36	.35	.30	.63
Earth	.54	.13	.39	.49	.37	.67
Cognitive Skills	.54	.15	.38	.41	.27	.84
Process Skills	.59	.11	.38	-	-	-

TABLE 5.2

Frequency Distributions of Item Difficulty Values and Point-Biserial Discrimination Indices by Content Cluster

GEPA March 2003 Language Arts Literacy

Item Statistics	Interpreting Text	Analyzing Text	Total
ITEM DIFFICULTY: P-VALUES			
.900+	1	–	1
.800 – .899	4	3	7
.700 – .799	2	1	3
.600 – .699	1	2	3
.500 – .599	3	2	5
.400 – .499	0	1	1
MEAN P-VALUE	.75	.69	.72
MEDIAN P-VALUE	.75	.68	.72
ITEM DISCRIMINATION: POINT-BISERIAL CORRELATIONS			
.50+	3	3	6
.40 – .49	8	4	12
.30 – .39	0	1	1
< .30	0	1	1
MEAN POINT-BISERIAL	.47	.43	.46
MEDIAN POINT-BISERIAL	.47	.45	.47
TOTAL NUMBER OF ITEMS	11	9	20

TABLE 5.3

**Frequency Distributions of Item Difficulty Values
and Point-Biserial Discrimination Indices by Content Cluster**

GEPA March 2003 Mathematics

Item Statistics	Number Sense, Concepts, & Applications	Spatial Sense & Geometry	Data Analysis, Probability, Statistics & Discrete Math	Patterns, Functions, & Algebra	Knowledge	Problem Solving	Total Tests
ITEM DIFFICULTY: P-VALUES							
.800 – .899	0	0	0	1	1	1	1
.700 – .799	2	1	3	2	8	7	8
.600 – .699	1	0	2	1	4	3	4
.500 – .599	3	4	1	3	11	3	11
.400 – .499	0	4	0	2	6	3	6
MEAN P-VALUE	.63	.52	.69	.61	.60	.65	.60
MEDIAN P-VALUE	.61	.52	.69	.58	.56	.67	.56
ITEM DISCRIMINATION: POINT-BISERIAL CORRELATIONS							
.50 – .59	0	1	1	1	3	3	3
.40 – .49	4	3	3	6	16	10	16
.30 – .39	2	4	1	1	8	3	8
<.30	0	1	1	1	3	1	3
MEAN POINT-BISERIAL	.44	.40	.43	.43	.42	.45	.42
MEDIAN POINT-BISERIAL	.46	.40	.46	.44	.44	.45	.44
TOTAL NUMBER OF ITEMS	6	9	6	9	30	17	30

TABLE 5.4

**Frequency Distributions of Item Difficulty Values
and Point-Biserial Discrimination Indices by Content Cluster**

GEPA March 2003 Science

Item Statistics	Life	Physical	Earth	Cognitive Skills	Process Skills	Total Test
ITEM DIFFICULTY: P-VALUES						
.800 – .899	1	0	0	1	0	1
.700 – .799	2	2	2	1	5	6
.600 – .699	5	7	3	7	8	15
.500 – .599	4	1	4	4	5	9
.400 – .499	2	4	2	5	3	8
<.400	2	2	2	4	2	6
MEAN P-VALUE	.58	.56	.54	.54	.59	.56
MEDIAN P-VALUE	.60	.63	.53	.54	.64	.58
ITEM DISCRIMINATION: POINT-BISERIAL CORRELATIONS						
.50 – .59	2	1	2	3	2	5
.40 – .49	5	6	2	7	6	13
.30 – .39	5	5	8	7	11	18
.20 – .29	4	3	1	5	3	8
<.20	0	1	0	0	1	1
MEAN POINT-BISERIAL	.39	.36	.39	.38	.38	.38
MEDIAN POINT-BISERIAL	.37	.37	.37	.38	.37	.38
TOTAL NUMBER OF ITEMS	16	16	13	22	23	45

TABLE 5.5**Percentage of Students Omitting the Last Items of Each Test Part****March 2003**

Test Section	Multiple-Choice		Open-Ended	
	Item Number	Percentage Omitting	Item Number	Percentage Omitting
Reading				
Part A	Item 8	0.1%	Item 11	2.0%
	Item 9	0.2%	Item 12	4.2%
	Item 10	0.2%		
Part B	Item 8	0.2%	Item 11	2.7%
	Item 9	0.2%	Item 12	4.5%
	Item 10	0.2%		
Mathematics				
Part A	Item 8	0.4%	Item 11	6.2%
	Item 9	0.4%	Item 12	3.3%
	Item 10	0.4%		
Part B	Item 8	0.4%	Item 11	4.1%
	Item 9	0.4%	Item 12	8.7%
	Item 10	0.5%		
Part C	Item 8	0.2%	Item 11	2.6%
	Item 9	0.3%	Item 12	7.2%
	Item 10	0.5%		
Science				
Part A	Item 13	0.6%	Item 16	3.9%
	Item 14	0.7%		
	Item 15	1.3%		
Part B	Item 13	0.3%	Item 16	2.9%
	Item 14	0.6%		
	Item 15	0.5%		
Part C	Item 13	0.3%	Item 16	3.3%
	Item 14	0.5%		
	Item 15	0.4%		

Intercorrelations

The Pearson product-moment correlation between student scores on the Language Arts Literacy section and the Mathematics section was .74, the Language Arts Literacy section and the Science section was .75, and the Mathematics section and the Science section was .80. Table 5.6 shows the correlations between students' scores in the major content clusters and item types. Table 5.7 shows the correlations between student scores on the content clusters. The scores used for all correlations were expressed in the raw score metric.

Note that correlations between a content area and cluster within that content area are partially a function of the proportion of the content area that is made up of items from the given cluster. Clusters with many items that make up a large proportion of the content area score increase the cluster with content area correlation.

For example, the correlation between Reading and Language Arts Literacy in Table 5.6 is quite high (.96) because 36 Reading points are part of the total Language Arts Literacy 62 points.

In addition, correlations are partially a function of the number of items in the measures being correlated. Therefore, the number of items in the content areas and clusters being correlated must be considered when their correlations are evaluated. In Table 5.7, the L3 Writing/Speculate cluster has only six points, so this cluster may not correlate as highly with other clusters due to this small number of points.

TABLE 5.6

Intercorrelations Among GEPA Major Content Clusters and Item Types

March 2003

Major Content and Item Types	Major Content Clusters and Item Types											
	Language Arts Literacy (L)					Mathematics (M)			Science (S)			
	LAT	R	R MC	R OE	W	M T	M MC	M OE	ST	S MC	S OE	
LAT Language Arts Literacy (62)												
R Reading (36)	.96											
R MC Reading Multiple Choice (20)	.90	.96										
R OE Reading Open ended (16)	.86	.85	.65									
W Writing (26)	.92	.78	.69	.77								
MT Mathematics (48)	.74	.72	.69	.62	.66							
M MC Mathematics Multiple-Choice (30)	.70	.69	.66	.57	.62	.96						
M OE Mathematics Open-ended (18)	.71	.69	.65	.61	.64	.94	.82					
ST Science (54)	.75	.76	.74	.60	.64	.80	.76	.77				
S MC Science Multiple-Choice (45)	.73	.73	.73	.58	.61	.79	.75	.75	.99			
S OE Science Open-ended (9)	.68	.67	.64	.57	.59	.70	.65	.69	.84	.75		

Number in parentheses is the number of points.

Language Arts Literacy N = 106,272; Mathematics N = 107,063; Science N = 106,677.

TABLE 5.7
Intercorrelations Among GEPA Content Areas and Clusters
March 2003

		Test Section/Cluster														Science (S)										
		LAT Language Arts Literacy							MT Mathematics							S1			S2			S3		S4		S5
Test Section/Cluster	LAT	L1	L2	L3	L4	L5	L6	L7	MT	M1	M2	M3	M4	M5	M6	ST	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5
L 1 Reading (36)	.96																									
L 2 Writing (26)	.92	.78																								
L 3 Writing/Speculate (6)	.78	.69	.82																							
L 4 Writing/Persuade (12)	.84	.73	.91	.70																						
L 5 Revise/Edit (8)	.75	.62	.85	.57	.59																					
L 6 Interpreting Text (15)	.90	.93	.72	.63	.67	.57																				
L 7 Analyzing/Critiquing Text (22)	.92	.95	.76	.67	.70	.60	.78																			
MT Mathematics (48)		.74	.72	.66	.56	.61	.55	.69	.67																	
M1 Number Sense, Concepts, and Applications (12)	.65	.64	.59	.50	.54	.49	.49	.61	.60	.90																
M2 Spatial Sense and Geometry (12)	.61	.60	.54	.45	.49	.46	.57	.56	.88	.72																
M3 Data Analysis, Probability, Statistics, and Discrete Mathematics (12)	.68	.67	.62	.54	.57	.50	.64	.62	.88	.73	.69															
M4 Patterns, Functions, and Algebra (12)	.68	.67	.60	.51	.55	.49	.65	.62	.89	.74	.70	.73														
M5 Knowledge (48)	.74	.72	.66	.56	.61	.55	.69	.67	1.00	.90	.88	.88	.89													
M6 Problem Solving (32)	.74	.73	.67	.57	.61	.55	.70	.68	.98	.90	.85	.85	.88	.98												
ST Science (54)		.75	.76	.64	.55	.58	.52	.72	.70	.80	.71	.71	.73	.80	.80											
S1 Life (19)	.70	.71	.59	.51	.54	.49	.68	.66	.74	.65	.64	.65	.67	.74	.73	.92										
S2 Physical (19)	.67	.67	.58	.49	.52	.48	.64	.63	.72	.64	.64	.63	.66	.72	.71	.90	.73									
S3 Earth (16)	.66	.67	.56	.48	.52	.46	.64	.62	.73	.64	.64	.64	.66	.73	.72	.90	.75	.72								
S4 Cognitive Skills (31)	.72	.72	.61	.53	.56	.51	.69	.67	.78	.69	.68	.70	.78	.77	.96	.88	.87	.87								
S5 Process Skills (23)	.70	.71	.60	.51	.55	.49	.69	.66	.74	.65	.65	.66	.68	.74	.74	.93	.86	.84	.84	.80						

Number in parentheses is the number of points.
 Language Arts Literacy N = 106,272; Mathematics N = 107,063; Science N = 106,677.

Appendix A

Cycle II Test Results

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

DFG A and State Report



Number Enrolled: 19,064

	NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy								
DFG A								
General Education ³	13,351	5,628	42.2	7,572	56.7	151	1.1	202.0
Special Education ⁴	3,345	3,101	92.7	244	7.3	0	0.0	163.2
Limited English Proficient ⁵	1,678	1,501	89.5	177	10.5	0	0.0	162.5
Total Students ⁶	18,315	10,172	55.5	7,992	43.6	151	0.8	191.4
State								
General Education ³	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education ⁴	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient ⁵	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students ⁶	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics								
DFG A								
General Education ³	13,464	8,571	63.7	4,070	30.2	823	6.1	194.2
Special Education ⁴	3,459	3,323	96.1	129	3.7	7	0.2	166.1
Limited English Proficient ⁵	1,719	1,512	88.0	191	11.1	16	0.9	175.7
Total Students ⁶	18,582	13,350	71.8	4,386	23.6	846	4.6	187.3
State								
General Education ³	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education ⁴	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient ⁵	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students ⁶	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science								
DFG A								
General Education ³	13,448	7,008	52.1	5,930	44.1	510	3.8	200.2
Special Education ⁴	3,448	3,015	87.4	421	12.2	12	0.3	178.6
Limited English Proficient ⁵	1,712	1,512	88.3	194	11.3	6	0.4	178.5
Total Students ⁶	18,548	11,478	61.9	6,542	35.3	528	2.8	194.3
State								
General Education ³	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education ⁴	16,675	10,195	61.1	5,838	35.4	582	3.5	194.7
Limited English Proficient ⁵	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students ⁶	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

DFG B and State Report



Number Enrolled: 11,170

	NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy								
DFG B								
General Education ³	8,482	1,860	21.9	6,344	74.8	278	3.3	214.1
Special Education ⁴	1,973	1,663	84.3	309	15.7	1	0.1	174.1
Limited English Proficient ⁵	500	426	85.2	74	14.8	0	0.0	165.6
Total Students ⁶	10,946	3,940	36.0	6,727	61.5	279	2.5	204.7
State								
General Education ³	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education ⁴	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient ⁵	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students ⁶	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics								
DFG B								
General Education ³	8,519	3,844	45.1	3,781	44.4	894	10.5	207.2
Special Education ⁴	1,998	1,789	89.5	201	10.1	8	0.4	172.5
Limited English Proficient ⁵	507	428	84.4	75	14.8	4	0.8	178.0
Total Students ⁶	11,015	6,054	55.0	4,055	36.8	906	8.2	199.6
State								
General Education ³	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education ⁴	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient ⁵	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students ⁶	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science								
DFG B								
General Education ³	8,501	2,092	24.6	5,308	62.4	1,101	13.0	218.1
Special Education ⁴	2,003	1,420	70.9	561	28.0	22	1.1	189.0
Limited English Proficient ⁵	502	433	86.3	68	13.5	1	0.2	180.0
Total Students ⁶	10,997	3,937	35.8	5,936	54.0	1,124	10.2	211.1
State								
General Education ³	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education ⁴	16,675	10,195	61.1	5,838	35.4	582	3.5	194.7
Limited English Proficient ⁵	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students ⁶	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System

Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

DFG CD and State Report



Number Enrolled: 10,671

		NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy									
DFG CD									
General Education	3	8,334	1,420	17.0	6,556	78.7	358	4.3	216.6
Special Education	4	1,889	1,465	77.6	422	22.3	2	0.1	179.0
Limited English Proficient	5	243	212	87.2	31	12.8	0	0.0	166.3
Total Students	6	10,459	3,090	29.5	7,009	67.0	360	3.4	208.7
State									
General Education	3	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education	4	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient	5	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students	6	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics									
DFG CD									
General Education	3	8,370	3,672	43.9	3,734	44.6	964	11.5	208.2
Special Education	4	1,922	1,685	87.7	219	11.4	18	0.9	174.7
Limited English Proficient	5	247	207	83.8	33	13.4	7	2.8	179.1
Total Students	6	10,531	5,556	52.8	3,986	37.9	989	9.4	201.4
State									
General Education	3	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education	4	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient	5	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students	6	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science									
DFG CD									
General Education	3	8,376	1,628	19.4	5,462	65.2	1,286	15.4	221.6
Special Education	4	1,907	1,210	63.5	658	34.5	39	2.0	193.4
Limited English Proficient	5	243	206	84.8	37	15.2	0	0.0	181.2
Total Students	6	10,518	3,036	28.9	6,157	58.5	1,325	12.6	215.6
State									
General Education	3	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education	4	16,675	10,195	61.1	5,838	35.4	582	3.5	194.7
Limited English Proficient	5	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students	6	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

DFG DE and State Report



Number Enrolled: 16,601

		NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy									
DFG DE									
General Education	3	13,652	1,566	11.5	11,297	82.7	789	5.8	221.1
Special Education	4	2,477	1,778	71.8	696	28.1	3	0.1	183.7
Limited English Proficient	5	277	239	86.3	38	13.7	0	0.0	172.0
Total Students	6	16,399	3,576	21.8	12,031	73.4	792	4.8	214.6
State									
General Education	3	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education	4	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient	5	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students	6	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics									
DFG DE									
General Education	3	13,674	4,457	32.6	7,040	51.5	2,177	15.9	215.9
Special Education	4	2,502	2,113	84.5	356	14.2	33	1.3	177.7
Limited English Proficient	5	281	220	78.3	53	18.9	8	2.8	184.1
Total Students	6	16,449	6,782	41.2	7,449	45.3	2,218	13.5	209.5
State									
General Education	3	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education	4	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient	5	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students	6	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science									
DFG DE									
General Education	3	13,688	1,951	14.3	8,999	65.7	2,738	20.0	226.4
Special Education	4	2,499	1,434	57.4	981	39.3	84	3.4	196.9
Limited English Proficient	5	281	221	78.6	60	21.4	0	0.0	184.7
Total Students	6	16,460	3,598	21.9	10,040	61.0	2,822	17.1	221.2
State									
General Education	3	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education	4	16,675	10,195	61.1	5,838	35.4	582	3.5	194.7
Limited English Proficient	5	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students	6	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System

Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

DFG FG and State Report



Number Enrolled: 13,472

		NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy									
DFG FG									
General Education	³	11,199	1,027	9.2	9,243	82.5	929	8.3	223.7
Special Education	⁴	1,925	1,338	69.5	581	30.2	6	0.3	185.8
Limited English Proficient	⁵	220	190	86.4	30	13.6	0	0.0	172.3
Total Students	⁶	13,337	2,548	19.1	9,854	73.9	935	7.0	217.4
State									
General Education	³	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education	⁴	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient	⁵	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students	⁶	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics									
DFG FG									
General Education	³	11,211	3,015	26.9	5,950	53.1	2,246	20.0	220.7
Special Education	⁴	1,943	1,603	82.5	316	16.3	24	1.2	179.7
Limited English Proficient	⁵	219	151	68.9	52	23.7	16	7.3	189.0
Total Students	⁶	13,366	4,763	35.6	6,317	47.3	2,286	17.1	214.2
State									
General Education	³	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education	⁴	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient	⁵	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students	⁶	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science									
DFG FG									
General Education	³	11,213	1,101	9.8	7,170	63.9	2,942	26.2	231.4
Special Education	⁴	1,941	1,050	54.1	807	41.6	84	4.3	199.1
Limited English Proficient	⁵	221	179	81.0	42	19.0	0	0.0	183.7
Total Students	⁶	13,368	2,326	17.4	8,016	60.0	3,026	22.6	225.9
State									
General Education	³	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education	⁴	16,675	10,195	61.1	5,838	35.4	582	3.5	194.7
Limited English Proficient	⁵	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students	⁶	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

DFG GH and State Report



Number Enrolled: 14,445

	NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy								
DFG GH								
General Education ³	12,178	793	6.5	10,118	83.1	1,267	10.4	227.1
Special Education ⁴	1,936	1,131	58.4	799	41.3	6	0.3	190.9
Limited English Proficient ⁵	212	169	79.7	43	20.3	0	0.0	174.8
Total Students ⁶	14,309	2,077	14.5	10,959	76.6	1,273	8.9	221.5
State								
General Education ³	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education ⁴	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient ⁵	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students ⁶	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics								
DFG GH								
General Education ³	12,195	2,701	22.1	6,406	52.5	3,088	25.3	225.6
Special Education ⁴	1,963	1,478	75.3	436	22.2	49	2.5	184.2
Limited English Proficient ⁵	214	157	73.4	37	17.3	20	9.3	188.7
Total Students ⁶	14,355	4,319	30.1	6,879	47.9	3,157	22.0	219.4
State								
General Education ³	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education ⁴	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient ⁵	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students ⁶	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science								
DFG GH								
General Education ³	12,194	946	7.8	7,641	62.7	3,607	29.6	234.0
Special Education ⁴	1,957	918	46.9	938	47.9	101	5.2	203.0
Limited English Proficient ⁵	214	156	72.9	52	24.3	6	2.8	187.9
Total Students ⁶	14,348	2,004	14.0	8,630	60.1	3,714	25.9	229.2
State								
General Education ³	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education ⁴	16,675	10,195	61.1	5,898	35.4	582	3.5	194.7
Limited English Proficient ⁵	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students ⁶	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

DFG I and State Report



Number Enrolled: 20,373

	NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy								
DFG I								
General Education ³	17,464	565	3.2	14,064	80.5	2,835	16.2	232.2
Special Education ⁴	2,532	1,164	46.0	1,368	53.2	20	0.8	198.5
Limited English Proficient ⁵	246	158	64.2	85	34.6	3	1.2	185.2
Total Students ⁶	20,219	1,864	9.2	15,497	76.6	2,858	14.1	227.5
State								
General Education ³	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education ⁴	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient ⁵	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students ⁶	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics								
DFG I								
General Education ³	17,482	2,590	14.8	8,935	51.1	5,957	34.1	233.0
Special Education ⁴	2,543	1,688	66.4	756	29.7	99	3.9	191.1
Limited English Proficient ⁵	247	120	48.6	76	30.8	51	20.6	207.5
Total Students ⁶	20,250	4,381	21.6	9,762	48.2	6,107	30.2	227.5
State								
General Education ³	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education ⁴	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient ⁵	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students ⁶	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science								
DFG I								
General Education ³	17,478	857	4.9	10,076	57.6	6,545	37.4	239.1
Special Education ⁴	2,539	925	36.4	1,391	54.8	223	8.8	210.0
Limited English Proficient ⁵	244	145	59.4	86	35.2	13	5.3	198.0
Total Students ⁶	20,239	1,905	9.4	11,553	57.1	6,781	33.5	235.0
State								
General Education ³	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education ⁴	16,675	10,195	61.1	5,838	35.4	582	3.5	194.7
Limited English Proficient ⁵	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students ⁶	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

DFG J and State Report



Number Enrolled: 1,486

		NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy									
DFG J									
General Education	3	1,314	13	1.0	966	73.5	335	25.5	238.5
Special Education	4	156	53	34.0	102	65.4	1	0.6	202.6
Limited English Proficient	5	11	9	81.8	2	18.2	0	0.0	177.9
Total Students	6	1,481	75	5.1	1,070	72.2	336	22.7	234.3
State									
General Education	3	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education	4	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient	5	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students	6	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics									
DFG J									
General Education	3	1,315	123	9.4	668	50.8	524	39.8	238.2
Special Education	4	158	93	58.9	53	33.5	12	7.6	199.2
Limited English Proficient	5	11	4	36.4	6	54.5	1	9.1	210.3
Total Students	6	1,484	220	14.8	727	49.0	537	36.2	233.9
State									
General Education	3	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education	4	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient	5	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students	6	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science									
DFG J									
General Education	3	1,313	33	2.5	729	55.5	551	42.0	242.8
Special Education	4	157	42	26.8	99	63.1	16	10.0	217.0
Limited English Proficient	5	11	7	63.6	4	36.4	0	0.0	187.2
Total Students	6	1,481	82	5.5	832	56.2	567	38.3	239.7
State									
General Education	3	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education	4	16,675	10,195	61.1	5,898	35.4	582	3.5	194.7
Limited English Proficient	5	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students	6	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

DFG 0 and State Report



Number Enrolled: 198

		NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy									
DFG 0		47	45	95.7	2	4.3	0	0.0	164.0
General Education	3	100	97	97.0	3	3.0	0	0.0	154.8
Special Education	4	1	1	100.0	0	0.0	0	0.0	138.0
Limited English Proficient	5	147	142	96.6	5	3.4	0	0.0	157.7
Total Students	6								
State		86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
General Education	3	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Special Education	4	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Limited English Proficient	5	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Total Students	6								
Mathematics									
DFG 0		56	55	98.2	1	1.8	0	0.0	166.9
General Education	3	108	104	96.3	4	3.7	0	0.0	162.5
Special Education	4	1	1	100.0	0	0.0	0	0.0	144.0
Limited English Proficient	5	164	159	97.0	5	3.0	0	0.0	164.0
Total Students	6								
State		87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
General Education	3	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Special Education	4	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Limited English Proficient	5	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Total Students	6								
Science									
DFG 0		59	49	83.1	10	16.9	0	0.0	182.5
General Education	3	111	95	85.6	16	14.4	0	0.0	179.2
Special Education	4	1	1	100.0	0	0.0	0	0.0	185.0
Limited English Proficient	5	170	144	84.7	26	15.3	0	0.0	180.3
Total Students	6								
State		87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
General Education	3	16,675	10,195	61.1	5,898	35.4	582	3.5	194.7
Special Education	4	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Limited English Proficient	5	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2
Total Students	6								

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.² Excludes students' answer folders coded void.³ Excludes Special Education and Limited English Proficient students.⁴ Includes Special Education students only.⁵ Includes Limited English Proficient students only.⁶ Includes all students.⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

DFG R and State Report



Number Enrolled:	860	NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy									
DFG R									
General Education	3	751	352	46.9	386	51.4	13	1.7	199.5
Special Education	4	90	80	88.9	10	11.1	0	0.0	170.7
Limited English Proficient	5	4	4	100.0	0	0.0	0	0.0	162.0
Total Students	6	845	436	51.6	396	46.9	13	1.5	196.3
State									
General Education	3	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education	4	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient	5	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students	6	106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics									
DFG R									
General Education	3	755	581	77.0	148	19.6	26	3.4	186.3
Special Education	4	92	85	92.4	6	6.5	1	1.1	170.6
Limited English Proficient	5	4	3	75.0	1	25.0	0	0.0	173.8
Total Students	6	851	669	78.6	155	18.2	27	3.2	184.5
State									
General Education	3	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education	4	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient	5	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students	6	107,070	46,273	43.2	43,724	40.8	17,073	15.9	209.2
Science									
DFG R									
General Education	3	759	394	51.9	319	42.0	46	6.1	201.9
Special Education	4	91	71	78.0	19	20.9	1	1.1	186.9
Limited English Proficient	5	4	4	100.0	0	0.0	0	0.0	179.0
Total Students	6	854	469	56.9	338	39.6	47	5.5	200.2
State									
General Education	3	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education	4	16,675	10,195	61.1	5,898	35.4	582	3.5	194.7
Limited English Proficient	5	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students	6	107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

DFG S and State Report



Number Enrolled:	25	NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
Language Arts Literacy									
DFG S									
General Education	3	0	0	0.0	0	0.0	0	0.0	0.0
Special Education	4	22	17	77.3	5	22.7	0	0.0	172.9
Limited English Proficient	5	0	0	0.0	0	0.0	0	0.0	0.0
Total Students ⁶		22	17	77.3	5	22.7	0	0.0	172.9
State									
General Education	3	86,772	13,269	15.3	66,548	76.7	6,955	8.0	220.5
Special Education	4	16,445	11,887	72.3	4,519	27.5	39	0.2	181.1
Limited English Proficient	5	3,392	2,909	85.8	480	14.2	3	0.1	167.1
Total Students ⁶		106,479	27,937	26.2	71,545	67.2	6,997	6.6	212.8
Mathematics									
DFG S									
General Education	3	0	0	0.0	0	0.0	0	0.0	0.0
Special Education	4	23	20	87.0	3	13.0	0	0.0	176.3
Limited English Proficient	5	0	0	0.0	0	0.0	0	0.0	0.0
Total Students ⁶		23	20	87.0	3	13.0	0	0.0	176.3
State									
General Education	3	87,041	29,609	34.0	40,733	46.8	16,699	19.2	216.4
Special Education	4	16,711	13,981	83.7	2,479	14.8	251	1.5	177.4
Limited English Proficient	5	3,450	2,803	81.2	524	15.2	123	3.6	181.0
Total Students ⁶		107,070	46,723	43.2	43,724	40.8	17,073	15.9	209.2
Science									
DFG S									
General Education	3	0	0	0.0	0	0.0	0	0.0	0.0
Special Education	4	22	15	68.2	7	31.8	0	0.0	193.3
Limited English Proficient	5	0	0	0.0	0	0.0	0	0.0	0.0
Total Students ⁶		22	15	68.2	7	31.8	0	0.0	193.3
State									
General Education	3	87,029	16,059	18.5	51,644	59.3	19,326	22.2	225.3
Special Education	4	16,675	10,195	61.1	5,898	35.4	582	3.5	194.7
Limited English Proficient	5	3,433	2,864	83.4	543	15.8	26	0.8	181.7
Total Students ⁶		107,005	28,994	27.1	58,077	54.3	19,934	18.6	219.2

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

Special Needs Districts

Number Enrolled: 21,818

Language Arts Literacy²

Clusters		JUST PROFICIENT MEAN ¹		SPECIAL NEEDS MEAN		STATE MEAN	
1.	Writing (26) ⁷	11.2		11.9		13.8	
	General Education 3		6.9		8.9		
	Special Education 4		6.7		7.2		
	Limited English Proficient 5		10.6		12.9		
2.	Total Students ⁶	18.3					
	General Education 3		18.8		22.1		
	Special Education 4		11.4		14.8		
	Limited English Proficient 5		11.2		12.0		
3.	Total Students ⁶	9.0		16.8		20.7	
	General Education 3		9.0		10.6		
	Special Education 4		5.5		7.2		
	Limited English Proficient 5		5.3		5.8		
4.	Total Students ⁶	9.3		8.1		9.9	
	General Education 3		9.7		11.5		
	Special Education 4		5.8		7.6		
	Limited English Proficient 5		5.8		6.2		
	Total Students ⁶	8.7				10.8	
NUMBER INCLUDED ²		PARTIALLY PROFICIENT NUMBER		PROFICIENT NUMBER		ADVANCED PROFICIENT NUMBER	
GENERAL EDUCATION ³	15,400	6,126	39.8	9,061	58.8	213	1.4
SPECIAL EDUCATION ⁴	3,898	3,571	91.6	326	8.4	1	0.0
LIMITED ENGLISH PROFICIENT ⁵	1,766	1,575	89.2	191	10.8	0	0.0
TOTAL STUDENTS ⁶	21,001	11,210	53.4	9,577	45.6	214	1.0
SCALE SCORE MEAN							
GENERAL EDUCATION ³						203.3	
SPECIAL EDUCATION ⁴						164.4	
LIMITED ENGLISH PROFICIENT ⁵						162.8	
TOTAL STUDENTS ⁶						192.8	

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

Special Needs Districts



Number Enrolled: 21,818

Mathematics²

Clusters	JUST PROFICIENT MEAN ¹	SPECIAL NEEDS MEAN	STATE MEAN
1. Number Sense, Concepts, & Applications (12) ⁷	5.3		
General Education 3	5.0		6.8
Special Education 4	2.5		3.3
Limited English Proficient 5	3.4		3.8
Total Students ⁶	4.4		6.1
2. Spatial Sense & Geometry (12)	5.2		
General Education 3			6.5
Special Education 4			3.6
Limited English Proficient 5			4.0
Total Students ⁶	4.4		6.0
3. Data Analysis, Probability, Statistics, & Discrete Mathematics (12)	6.5		
General Education 3			7.3
Special Education 4			4.1
Limited English Proficient 5			4.1
Total Students ⁶			6.7
4. Patterns, Functions, & Algebra (12)	7.1		
General Education 3			7.8
Special Education 4			4.6
Limited English Proficient 5			4.9
Total Students ⁶			7.3
5. Knowledge (48)	24.0		
General Education 3			28.4
Special Education 4			15.7
Limited English Proficient 5			16.8
Total Students ⁶			26.1
6. Problem Solving Skills (32)	15.8		
General Education 3			18.9
Special Education 4			9.8
Limited English Proficient 5			10.5
Total Students ⁶			17.2
NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PROFICIENT NUMBER	ADVANCED PROFICIENT NUMBER
GENERAL EDUCATION ³	9,696	62.5	31.3
SPECIAL EDUCATION ⁴	3,833	95.4	4.4
LIMITED ENGLISH PROFICIENT ⁵	1,592	88.1	11.0
TOTAL STUDENTS ⁶	15,061	70.8	5.35
SCALE SCORE MEAN			
		960	6.2
		9	0.2
		17	0.9
		986	4.6

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.² Excludes students' answer folders coded void.³ Excludes Special Education and Limited English Proficient students.⁴ Includes Special Education students only.⁵ Includes Limited English Proficient students only.⁶ Includes all students.⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

Special Needs Districts⁸

Number Enrolled: 21,818

Science ²		JUST PROFICIENT MEAN ¹	SPECIAL NEEDS MEAN	STATE MEAN
Clusters				
1.	Life Science (19) ⁷	8.0		
	General Education 3	8.4		11.2
	Special Education 4	5.8		7.5
	Limited English Proficient 5	5.7		6.0
	Total Students ⁶	7.7		10.5
2.	Physical Science (19)	7.8		
	General Education 3	8.2		10.8
	Special Education 4	5.8		7.4
	Limited English Proficient 5	5.5		5.9
	Total Students ⁶	7.5		10.1
3.	Earth Science (16)	6.2		
	General Education 3	6.6		9.1
	Special Education 4	4.3		5.9
	Limited English Proficient 5	4.3		4.7
	Total Students ⁶	6.0		8.5
4.	Cognitive Skills (31)	11.1		
	General Education 4	12.0		16.7
	Special Education 4	8.1		10.8
	Limited English Proficient 5	7.9		8.5
	Total Students ⁶	10.9		15.5
5.	Process Skills (23)	10.9		
	General Education 3	11.2		14.4
	Special Education 4	7.8		10.0
	Limited English Proficient 5	7.7		8.2
	Total Students ⁶	10.3		13.5
NUMBER INCLUDED ²		PARTIALLY PROFICIENT NUMBER	PROFICIENT NUMBER	ADVANCED PROFICIENT NUMBER
GENERAL EDUCATION ³	15,492	7,661	49.5	46.0
SPECIAL EDUCATION ⁴	4,003	3,438	85.9	54.7
LIMITED ENGLISH PROFICIENT ⁵	1,798	1,592	88.5	200
TOTAL STUDENTS ⁶	21,229	12,630	59.5	7,878
				SCALE SCORE MEAN

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

⁸ Cluster level statistics for breach districts were excluded from the statewide cluster means.



New Jersey Statewide Testing System

Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

Non Special Needs Districts⁸



Number Enrolled: 86,547

Language Arts Literacy²

Clusters	JUST PROFICIENT MEAN ¹	NON SPECIAL NEEDS MEAN	STATE MEAN
1. Writing (26) ⁷	11.2	14.3	13.8
General Education ³		9.5	8.9
Special Education ⁴		7.8	7.2
Limited English Proficient ⁵		13.5	12.9
Total Students ⁶			
2. Reading (36)	18.3	22.9	22.1
General Education ³		15.8	14.8
Special Education ⁴		12.9	12.0
Limited English Proficient ⁵		21.7	20.7
Total Students ⁶			
3. Interpreting Text (15)	9.0	11.0	10.6
General Education ³		7.7	7.2
Special Education ⁴		6.3	5.8
Limited English Proficient ⁵		10.4	9.9
Total Students ⁶			
4. Analyzing/Criticizing Text (21)	9.3	11.9	11.5
General Education ³		8.1	7.6
Special Education ⁴		6.7	6.2
Limited English Proficient ⁵		11.3	10.8
Total Students ⁶			

GENERAL EDUCATION ³	PARTIALLY PROFICIENT NUMBER INCLUDED ²	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
SPECIAL EDUCATION ⁴	71,372	7,143	57,487	80.5	6,742	9.4	224.2
LIMITED ENGLISH PROFICIENT ⁵	12,547	8,316	4,193	33.4	38	0.3	186.3
TOTAL STUDENTS ⁶	1,626	1,334	82.0	289	17.8	3	171.8
	85,478	16,727	19.6	61,968	72.5	6,783	217.7

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education and Limited English Proficient students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

⁸ Cluster level statistics for breach districts were excluded from the statewide cluster means.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment

Non Special Needs Districts

Number Enrolled: 86,547

Mathematics²

Clusters	JUST PROFICIENT MEAN ¹	NON SPECIAL NEEDS MEAN	STATE MEAN
1. Number Sense, Concepts, & Applications (12) ⁷	5.3		
General Education 3	7.1		
Special Education 4	3.6		
Limited English Proficient 5	4.2		
Total Students ⁶	6.6		6.1
2. Spatial Sense & Geometry (12)	5.2		
General Education 3	6.9		
Special Education 4	3.8		
Limited English Proficient 5	4.4		
Total Students ⁶	6.4		6.0
3. Data Analysis, Probability, Statistics, & Discrete Mathematics (12)	6.5		
General Education 3	7.6		
Special Education 4	4.5		
Limited English Proficient 5	4.6		
Total Students ⁶	7.1		6.7
4. Patterns, Functions, & Algebra (12)	7.1		
General Education 3	8.2		
Special Education 4	5.0		
Limited English Proficient 5	5.5		
Total Students ⁶	7.7		7.3
5. Knowledge (48)	24.0		
General Education 3	29.9		
Special Education 4	16.9		
Limited English Proficient 5	18.7		
Total Students ⁶	27.7		26.1
6. Problem Solving Skills (32)	15.8		
General Education 3	20.0		
Special Education 4	10.7		
Limited English Proficient 5	11.8		
Total Students ⁶	18.4		17.2
GENERAL EDUCATION ³	NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PROFICIENT NUMBER
SPECIAL EDUCATION ⁴		PERCENT	PERCENT
LIMITED ENGLISH PROFICIENT ⁵			
TOTAL STUDENTS ⁶			
		SCALE SCORE	SCALE SCORE
		MEAN	MEAN

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System

Grade Eight Proficiency Assessment

Test Date: March 2003

CYCLE II

Non Special Needs Districts



Number Enrolled: 86,547

Science ²		JUST PROFICIENT MEAN ¹		NON SPECIAL NEEDS MEAN		STATE MEAN	
Clusters							
1.	Life Science (19) ⁷	8.0		11.8		11.2	
	General Education 3			8.1		7.5	
	Special Education 4			6.3		6.0	
	Limited English Proficient 5					10.5	
	Total Students ⁶	7.8		11.2			
2.	Physical Science (19)			11.3		10.8	
	General Education 3			7.9		7.4	
	Special Education 4			6.4		5.9	
	Limited English Proficient 5					10.1	
	Total Students ⁶	6.2		10.7			
3.	Earth Science (16)			9.7		9.1	
	General Education 3			6.4		5.9	
	Special Education 4			5.0		4.7	
	Limited English Proficient 5					8.5	
	Total Students ⁶	11.1		9.1			
4.	Cognitive Skills (31)			17.7		16.7	
	General Education 3			11.7		10.8	
	Special Education 4			9.1		8.5	
	Limited English Proficient 5					15.5	
	Total Students ⁶	10.9		16.7			
5.	Process Skills (23)			15.1		14.4	
	General Education 3			10.7		10.0	
	Special Education 4			8.7		8.2	
	Limited English Proficient 5					13.5	
	Total Students ⁶	14.3					

NUMBER INCLUDED ²	PARTIALLY PROFICIENT NUMBER	PARTIALLY PROFICIENT PERCENT	PROFICIENT NUMBER	PROFICIENT PERCENT	ADVANCED PROFICIENT NUMBER	ADVANCED PROFICIENT PERCENT	SCALE SCORE MEAN
GENERAL EDUCATION ³	8,398	11.7	44,510	62.2	18,629	26.0	230.4
SPECIAL EDUCATION ⁴	6,757	53.3	5,351	42.2	564	4.5	199.5
LIMITED ENGLISH PROFICIENT ⁵	1,635	1,272	77.8	343	21.0	20	185.4
TOTAL STUDENTS ⁶	85,776	16,364	19.1	50,99	58.5	19,213	225.0

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

New Jersey Statewide Testing System Grade Eight Proficiency Assessment Adequate Yearly Progress Report

State



Number Enrolled:¹ 08 , 365

	Language Arts Literacy ²					Mathematics ³					Science ⁴				
	Number Included	% Partially Proficient	% Proficient	% Advanced Proficient	Scale Score Mean	Number Included	% Partially Proficient	% Proficient	% Advanced Proficient	Scale Score Mean	Number Included	% Partially Proficient	% Proficient	% Advanced Proficient	Scale Score Mean
Total Students⁵	106,479	26.2	67.2	6.6	212.8	107,070	43.2	40.8	15.9	209.2	107,005	27.1	54.3	18.6	219.2
General Education ³	86,772	15.3	76.7	8.0	220.5	87,041	34.0	46.8	19.2	216.4	87,029	18.5	59.3	22.2	225.3
Limited English Proficient ⁵	3,392	85.8	14.2	0.1	167.1	3,450	81.2	15.2	3.6	181.0	3,433	83.4	15.8	0.8	181.7
Special Education ⁴	16,445	72.3	27.5	0.2	181.1	16,711	83.7	14.8	1.5	177.4	16,675	61.1	35.4	3.5	194.7
Gender⁶															
Female	51,875	19.8	70.8	9.4	218.3	52,069	44.6	41.4	13.9	207.9	52,054	28.3	56.4	15.3	217.1
Male	54,516	32.3	63.8	3.9	207.6	54,909	41.8	40.3	17.9	210.6	54,860	25.9	52.3	21.8	221.3
Migrant Status⁷															
Migrant	47	83.0	17.0	0.0	170.7	48	87.5	12.5	0.0	175.4	48	72.9	27.1	0.0	182.7
Non-Migrant	106,432	26.2	67.2	6.6	212.8	107,022	43.2	40.8	16.0	209.2	106,957	27.1	54.3	18.6	219.2
Ethnicity															
White	62,931	15.1	76.3	8.5	220.8	63,117	30.8	48.8	20.3	218.2	63,118	14.0	60.9	25.2	228.9
Black	18,301	52.5	46.5	1.0	194.3	18,521	75.1	22.1	2.7	185.1	18,482	56.1	40.7	3.1	197.5
Asian	6,182	13.8	69.8	16.4	225.6	6,191	19.5	42.7	37.8	232.0	6,180	14.4	52.9	32.7	232.1
Pacific Islander	357	13.4	77.0	9.5	221.3	358	29.1	47.2	23.7	220.8	359	15.6	64.1	20.3	225.5
Hispanic	16,250	44.7	53.8	1.5	197.8	16,402	64.3	30.3	5.4	192.8	16,389	50.0	44.7	5.3	201.5
Amer Indian/AK Native	161	37.3	57.1	5.6	205.5	161	47.2	42.2	10.6	204.0	161	35.4	52.2	12.4	212.0
Other	594	30.8	63.1	6.1	209.4	602	47.2	35.7	17.1	207.6	603	32.2	50.9	16.9	215.6
Multiple	553	36.2	58.8	5.1	205.9	561	53.8	34.0	12.1	201.8	556	35.1	52.3	12.6	213.0
Economic Status															
Econ Disadvantaged	27,454	51.9	47.2	0.9	193.8	27,761	70.1	25.7	4.2	188.6	27,731	55.1	41.0	3.9	198.2
Non-Econ Disadvantaged	79,025	17.3	74.1	8.5	219.4	79,309	33.8	46.1	20.1	216.5	79,274	17.3	58.9	23.8	226.6

* Differences in totals among demographic categories resulted from gridding errors or missing data in materials received from districts.

¹ The numbers in this column are the statewide raw score means for students whose scale score is 200.

² Excludes students' answer folders coded void.

³ Excludes Special Education and Limited English Proficient students.

⁴ Includes Special Education students only.

⁵ Includes Limited English Proficient students only.

⁶ Includes all students.

⁷ The number in parentheses is the total number of points possible.

Appendix B

Raw to Scale Scores Conversions

LAL Raw Score to Scale Score

RS	Ability	SS
0.0	-5.3740	103
0.5	-5.0210	104
1.0	-4.6680	106
1.5	-4.3080	107
2.0	-3.9480	110
2.5	-3.7305	111
3.0	-3.5130	113
3.5	-3.3540	115
4.0	-3.1950	117
4.5	-3.0685	119
5.0	-2.9420	121
5.5	-2.8365	122
6.0	-2.7310	124
6.5	-2.6405	126
7.0	-2.5500	128
7.5	-2.4705	130
8.0	-2.3910	132
8.5	-2.3200	134
9.0	-2.2490	136
9.5	-2.1830	138
10.0	-2.1170	139
10.5	-2.0550	141
11.0	-1.9930	143
11.5	-1.9335	144
12.0	-1.8740	146
12.5	-1.8155	147
13.0	-1.7570	149
13.5	-1.6985	150
14.0	-1.6400	152
14.5	-1.5815	153
15.0	-1.5230	155
15.5	-1.4640	156
16.0	-1.4050	158
16.5	-1.3450	159
17.0	-1.2850	161
17.5	-1.2245	162
18.0	-1.1640	163
18.5	-1.1035	165
19.0	-1.0430	166
19.5	-0.9820	168
20.0	-0.9210	169
20.5	-0.8605	171
21.0	-0.8000	172

RS	Ability	SS
21.5	-0.7395	174
22.0	-0.6790	175
22.5	-0.6185	177
23.0	-0.5580	178
23.5	-0.4975	180
24.0	-0.4370	182
24.5	-0.3765	183
25.0	-0.3160	185
25.5	-0.2555	186
26.0	-0.1950	188
26.5	-0.1340	189
27.0	-0.0730	191
27.5	-0.0115	193
28.0	0.0500	194
28.5	0.1125	196
29.0	0.1750	198
29.5	0.2380	200
30.0	0.3010	201
30.5	0.3650	202
31.0	0.4290	204
31.5	0.4940	206
32.0	0.5590	207
32.5	0.6265	209
33.0	0.6940	211
33.5	0.7625	212
34.0	0.8310	214
34.5	0.9015	216
35.0	0.9720	217
35.5	1.0455	219
36.0	1.1190	221
36.5	1.1940	222
37.0	1.2690	224
37.5	1.3475	226
38.0	1.4260	227
38.5	1.5080	229
39.0	1.5900	230
39.5	1.6750	232
40.0	1.7600	234
40.5	1.8490	235
41.0	1.9380	237
41.5	2.0305	238
42.0	2.1230	240
42.5	2.2190	242

RS	Ability	SS
43.0	2.3150	243
43.5	2.4140	245
44.0	2.5130	246
44.5	2.6140	248
45.0	2.7150	250
45.5	2.8185	251
46.0	2.9220	253
46.5	3.0255	254
47.0	3.1290	256
47.5	3.2335	257
48.0	3.3380	259
48.5	3.4455	261
49.0	3.5530	262
49.5	3.6620	264
50.0	3.7710	266
50.5	3.8835	268
51.0	3.9960	269
51.5	4.1140	271
52.0	4.2320	273
52.5	4.3585	275
53.0	4.4850	277
53.5	4.6230	279
54.0	4.7610	281
54.5	4.9160	283
55.0	5.0710	285
55.5	5.2490	287
56.0	5.4270	289
56.5	5.6355	291
57.0	5.8440	292
57.5	6.0945	294
58.0	6.3450	296
58.5	6.6525	298
59.0	6.9600	300
59.5	7.3530	300
60.0	7.7460	300
60.5	8.2950	300
61.0	8.8440	300
61.5	9.2880	300
62.0	9.7320	300

Mathematics Raw Score to Scale Score

RS	Ability	SS
0.0	-4.8980	137
0.5	-4.5415	138
1.0	-4.1850	139
1.5	-3.8190	140
2.0	-3.4530	142
2.5	-3.2305	143
3.0	-3.0080	144
3.5	-2.8445	145
4.0	-2.6810	146
4.5	-2.5495	147
5.0	-2.4180	149
5.5	-2.3070	150
6.0	-2.1960	151
6.5	-2.0990	152
7.0	-2.0020	154
7.5	-1.9155	155
8.0	-1.8290	156
8.5	-1.7500	157
9.0	-1.6710	159
9.5	-1.5980	160
10.0	-1.5250	161
10.5	-1.4570	162
11.0	-1.3890	164
11.5	-1.3250	165
12.0	-1.2610	166
12.5	-1.2005	168
13.0	-1.1400	169
13.5	-1.0825	170
14.0	-1.0250	172
14.5	-0.9700	173
15.0	-0.9150	174
15.5	-0.8625	176
16.0	-0.8100	177

RS	Ability	SS
16.5	-0.7585	178
17.0	-0.7070	180
17.5	-0.6575	181
18.0	-0.6080	183
18.5	-0.5600	184
19.0	-0.5120	185
19.5	-0.4650	187
20.0	-0.4180	188
20.5	-0.3725	190
21.0	-0.3270	191
21.5	-0.2820	193
22.0	-0.2370	194
22.5	-0.1925	196
23.0	-0.1480	197
23.5	-0.1045	199
24.0	-0.0610	200
24.5	-0.0175	202
25.0	0.0260	203
25.5	0.0690	205
26.0	0.1120	207
26.5	0.1550	208
27.0	0.1980	210
27.5	0.2410	211
28.0	0.2840	213
28.5	0.3275	215
29.0	0.3710	216
29.5	0.4145	218
30.0	0.4580	220
30.5	0.5025	221
31.0	0.5470	223
31.5	0.5925	225
32.0	0.6380	227
32.5	0.6840	228

RS	Ability	SS
33.0	0.7300	230
33.5	0.7780	232
34.0	0.8260	234
34.5	0.8760	235
35.0	0.9260	237
35.5	0.9780	239
36.0	1.0300	241
36.5	1.0855	243
37.0	1.1410	244
37.5	1.2000	246
38.0	1.2590	248
38.5	1.3225	250
39.0	1.3860	252
39.5	1.4560	254
40.0	1.5260	255
40.5	1.6035	257
41.0	1.6810	259
41.5	1.7695	261
42.0	1.8580	263
42.5	1.9610	265
43.0	2.0640	267
43.5	2.1885	268
44.0	2.3130	270
44.5	2.4710	272
45.0	2.6290	274
45.5	2.8480	276
46.0	3.0670	277
46.5	3.4330	279
47.0	3.7990	281
47.5	4.1565	282
48.0	4.5140	283

Science Raw Score to Scale Score

RS	Ability	SS
0.0	-4.636	126
0.5	-4.282	128
1.0	-3.928	129
1.5	-3.567	131
2.0	-3.206	133
2.5	-2.989	134
3.0	-2.772	136
3.5	-2.614	138
4.0	-2.455	140
4.5	-2.329	141
5.0	-2.202	143
5.5	-2.096	145
6.0	-1.990	147
6.5	-1.898	148
7.0	-1.805	150
7.5	-1.723	152
8.0	-1.641	154
8.5	-1.566	155
9.0	-1.492	157
9.5	-1.424	159
10.0	-1.356	160
10.5	-1.293	162
11.0	-1.229	164
11.5	-1.169	166
12.0	-1.110	167
12.5	-1.054	169
13.0	-0.998	170
13.5	-0.945	172
14.0	-0.891	173
14.5	-0.840	175
15.0	-0.789	177
15.5	-0.739	179
16.0	-0.690	180
16.5	-0.642	182
17.0	-0.595	183
17.5	-0.549	185

RS	Ability	SS
18.0	-0.503	187
18.5	-0.458	189
19.0	-0.414	190
19.5	-0.370	192
20.0	-0.327	193
20.5	-0.284	195
21.0	-0.241	196
21.5	-0.199	198
22.0	-0.157	200
22.5	-0.116	201
23.0	-0.074	203
23.5	-0.034	204
24.0	0.007	206
24.5	0.047	207
25.0	0.088	208
25.5	0.128	210
26.0	0.168	212
26.5	0.208	213
27.0	0.248	215
27.5	0.288	216
28.0	0.328	217
28.5	0.368	219
29.0	0.408	220
29.5	0.448	222
30.0	0.488	223
30.5	0.528	224
31.0	0.568	226
31.5	0.609	228
32.0	0.650	229
32.5	0.691	230
33.0	0.732	232
33.5	0.774	233
34.0	0.816	234
34.5	0.859	236
35.0	0.901	238
35.5	0.945	239

RS	Ability	SS
36.0	0.989	240
36.5	1.034	241
37.0	1.079	243
37.5	1.125	244
38.0	1.172	245
38.5	1.220	247
39.0	1.268	248
39.5	1.319	250
40.0	1.369	251
40.5	1.421	252
41.0	1.474	254
41.5	1.530	255
42.0	1.585	256
42.5	1.644	257
43.0	1.703	259
43.5	1.766	260
44.0	1.830	262
44.5	1.898	263
45.0	1.966	264
45.5	2.041	266
46.0	2.116	267
46.5	2.199	268
47.0	2.282	269
47.5	2.375	271
48.0	2.468	272
48.5	2.576	273
49.0	2.684	275
49.5	2.813	276
50.0	2.941	277
50.5	3.102	279
51.0	3.264	280
51.5	3.485	281
52.0	3.706	282
52.5	4.071	284
53.0	4.437	285
53.5	4.793	288
54.0	5.149	291

LAL Large Print and Braille Raw Score to Scale Score

RS	Ability	SS
0.0	-5.1150	104
0.5	-4.7550	105
1.0	-4.3950	107
1.5	-4.0245	109
2.0	-3.6540	112
2.5	-3.4310	114
3.0	-3.2080	117
3.5	-3.0490	119
4.0	-2.8900	121
4.5	-2.7670	124
5.0	2.6440	126
5.5	-2.5440	128
6.0	-2.4440	131
6.5	-2.3590	133
7.0	-2.2740	135
7.5	-2.1985	137
8.0	-2.1230	139
8.5	-2.0535	141
9.0	-1.9840	143
9.5	-1.9180	145
10.0	-1.8520	146
10.5	-1.7875	148
11.0	-1.7230	150
11.5	-1.6585	151
12.0	-1.5940	153
12.5	-1.5300	155
13.0	-1.4660	156
13.5	-1.4010	158
14.0	-1.3360	159
14.5	-1.2710	161
15.0	-1.2060	162
15.5	-1.1405	164
16.0	-1.0750	166
16.5	-1.0095	167
17.0	-0.9440	169
17.5	-0.8790	170
18.0	-0.8140	172
18.5	-0.7490	174

RS	Ability	SS
19.0	-0.6840	175
19.5	-0.6195	177
20.0	-0.5550	179
20.5	-0.4910	180
21.0	-0.4270	182
21.5	-0.3625	183
22.0	-0.2980	185
22.5	-0.2335	187
23.0	-0.1690	189
23.5	-0.1045	190
24.0	-0.0400	192
24.5	0.0250	194
25.0	0.0900	195
25.5	0.1560	197
26.0	0.2220	199
26.5	0.2895	200
27.0	0.3570	202
27.5	0.4255	204
28.0	0.4940	206
28.5	0.5635	208
29.0	0.6330	209
29.5	0.7040	211
30.0	0.7750	213
30.5	0.8495	214
31.0	0.9240	216
31.5	1.0005	218
32.0	1.0770	220
32.5	1.1565	222
33.0	1.2360	223
33.5	1.3185	225
34.0	1.4010	227
34.5	1.4870	228
35.0	1.5730	230
35.5	1.6635	232
36.0	1.7540	234
36.5	1.8490	235
37.0	1.9440	237
37.5	2.0435	239

RS	Ability	SS
38.0	2.1430	240
38.5	2.2465	242
39.0	2.3500	244
39.5	2.4575	245
40.0	2.5650	247
40.5	2.6755	250
41.0	2.7860	251
41.5	2.8985	252
42.0	3.0110	254
42.5	3.1255	256
43.0	3.2400	258
43.5	3.3565	259
44.0	3.4730	261
44.5	3.5915	263
45.0	3.7100	265
45.5	3.8345	267
46.0	3.9590	269
46.5	4.0905	271
47.0	4.2220	273
47.5	4.3645	275
48.0	4.5070	277
48.5	4.6670	279
49.0	4.8270	281
49.5	5.0120	284
50.0	5.1970	286
50.5	5.4175	288
51.0	5.6380	291
51.5	5.9065	293
52.0	6.1750	295
52.5	6.5060	297
53.0	6.8370	299
53.5	7.2535	300
54.0	7.6700	300
54.5	8.2380	300
55.0	8.8060	300
55.5	9.2560	300
56.0	9.7060	300

Mathematics Braille Raw Score to Scale Score

RS	Ability	SS
0.0	-4.8480	137
0.5	-4.4905	138
1.0	-4.1330	139
1.5	-3.7650	140
2.0	-3.3970	142
2.5	-3.1725	143
3.0	-2.9480	144
3.5	-2.7825	145
4.0	-2.6170	147
4.5	-2.4835	148
5.0	-2.3500	149
5.5	-2.2365	151
6.0	-2.1230	152
6.5	-2.0235	153
7.0	-1.9240	155
7.5	-1.8345	156
8.0	-1.7450	157
8.5	-1.6635	159
9.0	-1.5820	160
9.5	-1.5065	161
10.0	-1.4310	163
10.5	-1.3605	164
11.0	-1.2900	166
11.5	-1.2235	167
12.0	-1.1570	169
12.5	-1.0935	170
13.0	-1.0300	172
13.5	-0.9695	173

RS	Ability	SS
14.0	-0.9090	174
14.5	-0.8510	176
15.0	-0.7930	178
15.5	-0.7370	179
16.0	-0.6810	181
16.5	-0.6270	182
17.0	-0.5730	184
17.5	-0.5200	185
18.0	-0.4670	187
18.5	-0.4155	188
19.0	-0.3640	190
19.5	-0.3135	192
20.0	-0.2630	193
20.5	-0.2130	195
21.0	-0.1630	197
21.5	-0.1140	198
22.0	-0.0650	200
22.5	-0.0160	202
23.0	0.0330	204
23.5	0.0815	205
24.0	0.1300	207
24.5	0.1785	209
25.0	0.2270	211
25.5	0.2760	213
26.0	0.3250	215
26.5	0.3750	217
27.0	0.4250	218
27.5	0.4755	220

RS	Ability	SS
28.0	0.5260	222
28.5	0.5775	224
29.0	0.6290	226
29.5	0.6830	228
30.0	0.7370	230
30.5	0.7925	232
31.0	0.8480	234
31.5	0.9070	236
32.0	0.9660	239
32.5	1.0280	241
33.0	1.0900	243
33.5	1.1595	245
34.0	1.2290	247
34.5	1.3040	250
35.0	1.3790	252
35.5	1.4640	254
36.0	1.5490	256
36.5	1.6475	258
37.0	1.7460	261
37.5	1.8645	263
38.0	1.9830	265
38.5	2.1340	268
39.0	2.2850	270
39.5	2.4950	272
40.0	2.7050	274
40.5	3.0595	277
41.0	3.4140	279
41.5	3.7650	281
42.0	4.1160	282

Science Braille Raw Score to Scale Score

RS	Ability	SS
0.0	-4.599	126
0.5	-4.245	128
1.0	-3.890	129
1.5	-3.528	131
2.0	-3.166	133
2.5	-2.948	134
3.0	-2.730	137
3.5	-2.570	138
4.0	-2.410	141
4.5	-2.283	142
5.0	-2.155	144
5.5	-2.047	146
6.0	-1.940	148
6.5	-1.847	149
7.0	-1.753	151
7.5	-1.669	153
8.0	-1.586	155
8.5	-1.510	157
9.0	-1.435	158
9.5	-1.365	160
10.0	-1.295	162
10.5	-1.230	164
11.0	-1.165	166
11.5	-1.104	167
12.0	-1.042	169
12.5	-0.984	171
13.0	-0.926	172
13.5	-0.871	174
14.0	-0.815	177
14.5	-0.762	178
15.0	-0.709	180
15.5	-0.658	181
16.0	-0.606	183
16.5	-0.556	185

RS	Ability	SS
17.0	-0.506	187
17.5	-0.458	189
18.0	-0.409	190
18.5	-0.361	192
19.0	-0.314	194
19.5	-0.268	195
20.0	-0.221	197
20.5	-0.175	198
21.0	-0.129	200
21.5	-0.083	202
22.0	-0.038	204
22.5	0.007	206
23.0	0.052	207
23.5	0.097	209
24.0	0.142	210
24.5	0.187	213
25.0	0.232	214
25.5	0.276	216
26.0	0.321	217
26.5	0.366	219
27.0	0.412	220
27.5	0.458	222
28.0	0.503	223
28.5	0.549	225
29.0	0.595	227
29.5	0.642	229
30.0	0.689	230
30.5	0.737	232
31.0	0.784	233
31.5	0.833	235
32.0	0.882	237
32.5	0.933	238
33.0	0.983	240
33.5	1.035	241

RS	Ability	SS
34.0	1.087	243
34.5	1.141	244
35.0	1.195	246
35.5	1.251	248
36.0	1.307	250
36.5	1.367	251
37.0	1.426	252
37.5	1.488	254
38.0	1.551	255
38.5	1.618	257
39.0	1.685	258
39.5	1.757	260
40.0	1.828	262
40.5	1.906	263
41.0	1.985	265
41.5	2.071	266
42.0	2.157	267
42.5	2.253	269
43.0	2.350	270
43.5	2.461	272
44.0	2.573	273
44.5	2.705	275
45.0	2.837	276
45.5	3.001	278
46.0	3.166	279
46.5	3.390	281
47.0	3.614	282
47.5	3.983	283
48.0	4.352	285
48.5	4.709	287
49.0	5.067	290

Science Large Print Raw Score to Scale Score

RS	Ability	SS
0.0	-4.629	126
0.5	-4.275	128
1.0	-3.921	129
1.5	-3.559	131
2.0	-3.198	133
2.5	-2.980	134
3.0	-2.763	136
3.5	-2.605	138
4.0	-2.446	140
4.5	-2.319	142
5.0	-2.193	143
5.5	-2.086	145
6.0	-1.980	147
6.5	-1.888	148
7.0	-1.795	151
7.5	-1.713	152
8.0	-1.631	154
8.5	-1.556	156
9.0	-1.482	157
9.5	-1.413	159
10.0	-1.345	161
10.5	-1.281	163
11.0	-1.217	164
11.5	-1.158	166
12.0	-1.098	168
12.5	-1.041	169
13.0	-0.985	171
13.5	-0.931	172
14.0	-0.877	174
14.5	-0.826	176
15.0	-0.774	178
15.5	-0.725	179
16.0	-0.675	181
16.5	-0.627	183
17.0	-0.579	184
17.5	-0.533	186

RS	Ability	SS
18.0	-0.487	188
18.5	-0.442	189
19.0	-0.396	191
19.5	-0.352	192
20.0	-0.308	194
20.5	-0.265	195
21.0	-0.222	197
21.5	-0.179	198
22.0	-0.137	200
22.5	-0.095	202
23.0	-0.053	203
23.5	-0.012	205
24.0	0.029	206
24.5	0.070	208
25.0	0.111	209
25.5	0.152	211
26.0	0.193	213
26.5	0.234	214
27.0	0.274	216
27.5	0.315	217
28.0	0.355	219
28.5	0.396	220
29.0	0.437	221
29.5	0.477	223
30.0	0.518	224
30.5	0.559	226
31.0	0.601	227
31.5	0.642	229
32.0	0.684	230
32.5	0.726	231
33.0	0.769	233
33.5	0.812	234
34.0	0.855	236
34.5	0.900	237
35.0	0.944	239
35.5	0.989	240

RS	Ability	SS
36.0	1.034	241
36.5	1.081	243
37.0	1.128	244
37.5	1.176	245
38.0	1.225	247
38.5	1.276	248
39.0	1.326	250
39.5	1.379	251
40.0	1.432	252
40.5	1.488	254
41.0	1.544	255
41.5	1.603	256
42.0	1.662	258
42.5	1.725	259
43.0	1.789	261
43.5	1.858	262
44.0	1.927	264
44.5	2.002	265
45.0	2.077	266
45.5	2.160	268
46.0	2.243	269
46.5	2.337	270
47.0	2.431	271
47.5	2.539	273
48.0	2.647	274
48.5	2.776	276
49.0	2.905	277
49.5	3.067	278
50.0	3.229	280
50.5	3.451	281
51.0	3.672	282
51.5	4.038	284
52.0	4.405	285
52.5	4.761	288
53.0	5.118	290

LAL Breach Raw Score to Scale Score

RS	Ability	SS
0.0	-5.1480	104
0.5	-4.7905	105
1.0	-4.4330	107
1.5	-4.0710	109
2.0	-3.7090	111
2.5	-3.5000	113
3.0	-3.2910	116
3.5	-3.1475	117
4.0	-3.0040	120
4.5	-2.8965	121
5.0	-2.7890	123
5.5	-2.7030	125
6.0	-2.6170	127
6.5	-2.5445	128
7.0	-2.4720	130
7.5	-2.4070	132
8.0	-2.3420	133
8.5	-2.2835	135
9.0	-2.2250	136
9.5	-2.1690	138
10.0	-2.1130	139
10.5	-2.0590	141
11.0	-2.0050	142
11.5	-1.9510	144
12.0	-1.8970	145
12.5	-1.8425	147
13.0	-1.7880	148
13.5	-1.7325	150
14.0	-1.6770	151
14.5	-1.6200	152
15.0	-1.5630	154
15.5	-1.5045	155
16.0	-1.4460	157
16.5	-1.3860	158
17.0	-1.3260	160
17.5	-1.2655	161
18.0	-1.2050	162
18.5	-1.1435	164
19.0	-1.0820	165
19.5	-1.0210	167
20.0	-0.9600	168
20.5	-0.8985	170

RS	Ability	SS
21.0	-0.8370	171
21.5	-0.7765	173
22.0	-0.7160	174
22.5	-0.6555	176
23.0	-0.5950	178
23.5	-0.5355	179
24.0	-0.4760	181
24.5	-0.4170	182
25.0	-0.3580	184
25.5	-0.2995	185
26.0	-0.2410	187
26.5	-0.1840	188
27.0	-0.1270	190
27.5	-0.0710	191
28.0	-0.0150	193
28.5	0.0405	194
29.0	0.0960	195
29.5	0.1505	197
30.0	0.2050	198
30.5	0.2590	200
31.0	0.3130	201
31.5	0.3660	202
32.0	0.4190	204
32.5	0.4730	205
33.0	0.5270	207
33.5	0.5815	208
34.0	0.6360	209
34.5	.6910	211
35.0	0.7460	212
35.5	0.8035	213
36.0	0.8610	215
36.5	0.9205	216
37.0	0.9800	218
37.5	1.0425	219
38.0	1.1050	220
38.5	1.1715	222
39.0	1.2380	223
39.5	1.3085	225
40.0	1.3790	226
40.5	1.4545	228
41.0	1.5300	229
41.5	1.6100	231

RS	Ability	SS
42.0	1.6900	232
42.5	1.7755	234
43.0	1.8610	236
43.5	1.9500	237
44.0	2.0390	239
44.5	2.1315	240
45.0	2.2240	242
45.5	2.3175	243
46.0	2.4110	245
46.5	2.5050	246
47.0	2.5990	248
47.5	2.6930	250
48.0	2.7870	251
48.5	2.8840	252
49.0	2.9810	254
49.5	3.0810	255
50.0	3.1810	257
50.5	3.2870	258
51.0	3.3930	260
51.5	3.5095	262
52.0	3.6260	264
52.5	3.7570	266
53.0	3.8880	268
53.5	4.0400	270
54.0	4.1920	272
54.5	4.3725	275
55.0	4.5530	278
55.5	4.7705	281
56.0	4.9880	284
56.5	5.2525	287
57.0	5.5170	289
57.5	5.8315	292
58.0	6.1460	295
58.5	6.4975	297
59.0	6.8490	299
59.5	7.2350	300
60.0	7.6210	300
60.5	8.1175	300
61.0	8.6140	300
61.5	9.0240	300
62.0	9.4340	300

Appendix C

Scale Scores with Frequencies

2003 GEPA Language Arts Literacy Scale Scores with Frequencies

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
106	5	0.0	5	0.0
107	2	0.0	7	0.0
110	25	0.0	32	0.0
111	7	0.0	39	0.0
113	35	0.0	74	0.1
115	10	0.0	84	0.1
117	85	0.1	169	0.2
119	32	0.0	201	0.2
121	102	0.1	303	0.3
122	41	0.0	344	0.3
124	136	0.1	480	0.5
126	70	0.1	550	0.5
128	179	0.2	729	0.7
130	99	0.1	828	0.8
132	182	0.2	1,010	0.9
134	127	0.1	1,137	1.1
135	1	0.0	1,138	1.1
136	218	0.2	1,356	1.3
138	179	0.2	1,535	1.4
139	244	0.2	1,779	1.7
141	197	0.2	1,976	1.9
143	245	0.2	2,221	2.1
144	226	0.2	2,447	2.3
145	1	0.0	2,448	2.3
146	288	0.3	2,736	2.6
147	265	0.2	3,001	2.8
149	348	0.3	3,349	3.1
150	270	0.3	3,619	3.4
152	359	0.3	3,978	3.7
153	336	0.3	4,314	4.1
154	1	0.0	4,315	4.1
155	422	0.4	4,737	4.5
156	391	0.4	5,128	4.8
158	439	0.4	5,567	5.2
159	394	0.4	5,961	5.6
160	1	0.0	5,962	5.6
161	515	0.5	6,477	6.1
162	422	0.4	6,899	6.5
163	555	0.5	7,454	7.0
165	461	0.4	7,915	7.4
166	594	0.6	8,509	8.0
168	500	0.5	9,009	8.5

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
169	604	0.6	9,613	9.0
171	632	0.6	10,245	9.6
172	709	0.7	10,954	10.3
173	2	0.0	10,956	10.3
174	649	0.6	11,605	10.9
175	736	0.7	12,341	11.6
177	691	0.6	13,032	12.3
178	840	0.8	13,872	13.0
179	2	0.0	13,874	13.0
180	801	0.8	14,675	13.8
182	945	0.9	15,620	14.7
183	950	0.9	16,570	15.6
184	1	0.0	16,571	15.6
185	1,052	1.0	17,623	16.6
186	948	0.9	18,571	17.5
187	1	0.0	18,572	17.5
188	1,152	1.1	19,724	18.5
189	1,156	1.1	20,880	19.6
191	1,282	1.2	22,162	20.8
193	1,289	1.2	23,451	22.0
194	1,320	1.2	24,771	23.3
195	1	0.0	24,772	23.3
196	1,527	1.4	26,299	24.7
198	1,571	1.5	27,870	26.2
200	1,689	1.6	29,559	27.8
201	1,776	1.7	31,335	29.5
202	1,892	1.8	33,227	31.2
204	1,929	1.8	35,156	33.1
206	2,017	1.9	37,173	35.0
207	2,102	2.0	39,275	36.9
208	3	0.0	39,278	36.9
209	2,263	2.1	41,541	39.1
211	2,431	2.3	43,972	41.3
212	2,476	2.3	46,448	43.7
214	2,555	2.4	49,003	46.1
216	2,587	2.4	51,590	48.5
217	2,739	2.6	54,329	51.1
219	2,671	2.5	57,000	53.6
220	3	0.0	57,003	53.6
221	2,765	2.6	59,768	56.2
222	2,875	2.7	62,643	58.9
223	3	0.0	62,646	58.9

2003 GEPA Language Arts Literacy Scale Scores with Frequencies (continued)

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
224	2,873	2.7	65,519	61.6
226	2,885	2.7	68,404	64.3
227	2,868	2.7	71,272	67.0
228	3	0.0	71,275	67.0
229	2,831	2.7	74,106	69.7
230	2,869	2.7	76,975	72.4
231	3	0.0	76,978	72.4
232	2,655	2.5	79,633	74.9
234	2,603	2.4	82,236	77.3
235	2,512	2.4	84,748	79.7
236	1	0.0	84,749	79.7
237	2,404	2.3	87,153	81.9
238	2,249	2.1	89,402	84.1
239	4	0.0	89,406	84.1
240	2,076	2.0	91,482	86.0
242	1,891	1.8	93,373	87.8
243	1,782	1.7	95,155	89.5
245	1,557	1.5	96,712	90.9
246	1,419	1.3	98,131	92.3
248	1,233	1.2	99,364	93.4
250	1,097	1.0	100,461	94.5
251	957	0.9	101,418	95.4
253	820	0.8	102,238	96.1
254	724	0.7	102,962	96.8

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
255	2	0.0	102,964	96.8
256	614	0.6	103,578	97.4
257	481	0.5	104,059	97.8
259	442	0.4	104,501	98.3
260	1	0.0	104,502	98.3
261	378	0.4	104,880	98.6
262	320	0.3	105,200	98.9
264	265	0.2	105,465	99.2
266	211	0.2	105,676	99.4
268	168	0.2	105,844	99.5
269	127	0.1	105,971	99.6
271	95	0.1	106,066	99.7
273	91	0.1	106,157	99.8
275	51	0.0	106,208	99.9
277	41	0.0	106,249	99.9
279	36	0.0	106,285	99.9
281	24	0.0	106,309	100.0
283	19	0.0	106,328	100.0
285	5	0.0	106,333	100.0
287	7	0.0	106,340	100.0
289	6	0.0	106,346	100.0
291	3	0.0	106,349	100.0
292	6	0.0	106,355	100.0
296	2	0.0	106,357	100.0
300	1	0.0	106,358	100.0

N-COUNT = 106,358 MEAN = 212.8267 STANDARD DEVIATION = 28.2567 SEM = 12.427

NOTE: These scale score frequencies consist of scores for 106,358 pupils including 86 students who took an alternate form due to a security breach. Some scale scores (e.g., 228, 231, 236, 239) occur only in the alternate form conversion tables.

Scores for 7 students who took the Braille form and 114 students who took the large-print form are not included in these frequencies.

2003 GEPA Mathematics Scale Scores with Frequencies

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
139	9	0.0	9	0.0
140	1	0.0	10	0.0
142	22	0.0	32	0.0
143	2	0.0	34	0.0
144	83	0.1	117	0.1
145	9	0.0	126	0.1
146	169	0.2	295	0.3
147	33	0.0	328	0.3
149	384	0.4	712	0.7
150	69	0.1	781	0.7
151	597	0.6	1,378	1.3
152	164	0.2	1,542	1.4
154	958	0.9	2,500	2.3
155	221	0.2	2,721	2.5
156	1,247	1.2	3,968	3.7
157	355	0.3	4,323	4.0
159	1,566	1.5	5,889	5.5
160	460	0.4	6,349	5.9
161	1,787	1.7	8,136	7.6
162	595	0.6	8,731	8.2
164	1,816	1.7	10,547	9.9
165	697	0.7	11,244	10.5
166	1,917	1.8	13,161	12.3
168	806	0.8	13,967	13.0
169	1,960	1.8	15,927	14.9
170	923	0.9	16,850	15.7
172	1,814	1.7	18,664	17.4
173	928	0.9	19,592	18.3
174	1,819	1.7	21,411	20.0
176	1,023	1.0	22,434	21.0
177	1,900	1.8	24,334	22.7
178	1,060	1.0	25,394	23.7
180	1,837	1.7	27,231	25.4
181	1,185	1.1	28,416	26.5
183	1,723	1.6	30,139	28.2
184	1,241	1.2	31,380	29.3
185	1,762	1.6	33,142	31.0
187	1,208	1.1	34,350	32.1
188	1,708	1.6	36,058	33.7
190	1,210	1.1	37,268	34.8
191	1,706	1.6	38,974	36.4
193	1,294	1.2	40,268	37.6

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
194	1,735	1.6	42,003	39.2
196	1,267	1.2	43,270	40.4
197	1,706	1.6	44,976	42.0
199	1,293	1.2	46,269	43.2
200	1,768	1.7	48,037	44.9
202	1,403	1.3	49,440	46.2
203	1,685	1.6	51,125	47.8
205	1,389	1.3	52,514	49.0
207	1,729	1.6	54,243	50.7
208	1,383	1.3	55,626	52.0
210	1,653	1.5	57,279	53.5
211	1,376	1.3	58,655	54.8
213	1,661	1.6	60,316	56.3
215	1,318	1.2	61,634	57.6
216	1,584	1.5	63,218	59.0
218	1,400	1.3	64,618	60.4
220	1,647	1.5	66,265	61.9
221	1,363	1.3	67,628	63.2
223	1,662	1.6	69,290	64.7
225	1,386	1.3	70,676	66.0
227	1,677	1.6	72,353	67.6
228	1,356	1.3	73,709	68.8
230	1,598	1.5	75,307	70.3
232	1,340	1.3	76,647	71.6
234	1,554	1.5	78,201	73.0
235	1,425	1.3	79,626	74.4
237	1,627	1.5	81,253	75.9
239	1,386	1.3	82,639	77.2
241	1,620	1.5	84,259	78.7
243	1,308	1.2	85,567	79.9
244	1,517	1.4	87,084	81.3
246	1,321	1.2	88,405	82.6
248	1,586	1.5	89,991	84.1
250	1,195	1.1	91,186	85.2
252	1,494	1.4	92,680	86.6
254	1,203	1.1	93,883	87.7
255	1,458	1.4	95,341	89.1
257	1,135	1.1	96,476	90.1
259	1,371	1.3	97,847	91.4
261	993	0.9	98,840	92.3
263	1,277	1.2	100,117	93.5
265	869	0.8	100,986	94.3

2003 GEPA Mathematics Scale Scores with Frequencies (continued)

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
267	1,115	1.0	102,101	95.4
268	770	0.7	102,871	96.1
270	983	0.9	103,854	97.0
272	593	0.6	104,447	97.6
274	808	0.8	105,255	98.3
276	428	0.4	105,683	98.7
277	594	0.6	106,277	99.3
279	247	0.2	106,524	99.5
281	348	0.3	106,872	99.8
282	87	0.1	106,959	99.9
283	104	0.1	107,063	100.0

N-COUNT = 107,063 MEAN = 209.2332 STANDARD DEVIATION = 34.2142 SEM = 13.024

NOTE: These scale score frequencies consist of scores for 107,063 pupils. Scores for 7 students who took the Braille form are not included in these frequencies.

2003 GEPA Science Scale Scores with Frequencies

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students	Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
129	1	0.0	1	0.0	191	8	0.0	21,571	20.2
133	5	0.0	6	0.0	192	1,134	1.1	22,705	21.2
136	9	0.0	15	0.0	193	1,754	1.6	24,459	22.9
140	13	0.0	28	0.0	194	2	0.0	24,461	22.9
142	1	0.0	29	0.0	195	1,275	1.2	25,736	24.1
143	39	0.0	68	0.1	196	1,881	1.8	27,617	25.8
145	6	0.0	74	0.1	197	4	0.0	27,621	25.8
147	81	0.1	155	0.1	198	1,303	1.2	28,924	27.1
148	16	0.0	171	0.2	200	1,824	1.7	30,748	28.8
149	2	0.0	173	0.2	201	1,380	1.3	32,128	30.1
150	153	0.1	326	0.3	203	1,861	1.7	33,989	31.8
152	24	0.0	350	0.3	204	1,461	1.4	35,450	33.2
154	335	0.3	685	0.6	205	2	0.0	35,452	33.2
155	60	0.1	745	0.7	206	1,862	1.7	37,314	34.9
156	6	0.0	751	0.7	207	1,445	1.4	38,759	36.3
157	447	0.4	1,198	1.1	208	1,818	1.7	40,577	38.0
159	96	0.1	1,294	1.2	210	1,485	1.4	42,062	39.4
160	709	0.7	2,003	1.9	211	2	0.0	42,064	39.4
162	169	0.2	2,172	2.0	212	1,774	1.7	43,838	41.0
163	6	0.0	2,178	2.0	213	1,663	1.6	45,501	42.6
164	995	0.9	3,173	3.0	214	2	0.0	45,503	42.6
166	219	0.2	3,392	3.2	215	1,825	1.7	47,328	44.3
167	1,223	1.1	4,615	4.3	216	1,588	1.5	48,916	45.8
169	349	0.3	4,964	4.6	217	1,868	1.7	50,784	47.5
170	1,475	1.4	6,439	6.0	218	2	0.0	50,786	47.5
172	495	0.5	6,934	6.5	219	1,549	1.4	52,335	49.0
173	1,619	1.5	8,553	8.0	220	1,866	1.7	54,201	50.7
175	631	0.6	9,184	8.6	221	2	0.0	54,203	50.7
177	1,697	1.6	10,881	10.2	222	1,518	1.4	55,721	52.1
178	7	0.0	10,888	10.2	223	1,866	1.7	57,587	53.9
179	718	0.7	11,606	10.9	224	1,683	1.6	59,270	55.5
180	1,753	1.6	13,359	12.5	226	1,870	1.7	61,140	57.2
181	11	0.0	13,370	12.5	227	2	0.0	61,142	57.2
182	841	0.8	14,211	13.3	228	1,652	1.5	62,794	58.8
183	1,865	1.7	16,076	15.0	229	1,814	1.7	4,608	60.4
184	12	0.0	16,088	15.1	230	1,546	1.4	66,154	61.9
185	928	0.9	17,016	15.9	231	1	0.0	66,155	61.9
186	1	0.0	17,017	15.9	232	1,789	1.7	67,944	63.6
187	1,663	1.6	18,680	17.5	233	1,630	1.5	69,574	65.1
188	9	0.0	18,689	17.5	234	1,782	1.7	71,356	66.8
189	1,043	1.0	19,732	18.5	236	1,600	1.5	72,956	68.3
190	1,831	1.7	21,563	20.2	238	1,761	1.6	74,717	69.9

2003 GEPA Science Scale Scores with Frequencies (continued)

Scale Score	Number of Students	Percent of Students	Cumulative Number of Students	Cumulative Percent of Students
239	1,566	1.5	76,283	71.4
240	1,730	1.6	78,013	73.0
241	1,463	1.4	79,476	74.4
243	1,575	1.5	81,051	75.8
244	1,509	1.4	82,560	77.2
245	1,474	1.4	84,034	78.6
246	1	0.0	84,035	78.6
247	1,435	1.3	85,470	80.0
248	1,488	1.4	86,958	81.4
250	1,434	1.3	88,392	82.7
251	1,425	1.3	89,817	84.0
252	1,234	1.2	91,051	85.2
254	1,377	1.3	92,428	86.5
255	1,215	1.1	93,643	87.6
256	1,280	1.2	94,923	88.8
257	1,058	1.0	95,981	89.8
259	1,084	1.0	97,065	90.8
260	1,026	1.0	98,091	91.8
262	1,078	1.0	99,169	92.8
263	878	0.8	100,047	93.6
264	930	0.9	100,977	94.5
266	772	0.7	101,749	95.2
267	822	0.8	102,571	96.0
268	594	0.6	103,165	96.5
269	640	0.6	103,805	97.1
271	549	0.5	104,354	97.6
272	522	0.5	104,876	98.1
273	396	0.4	105,272	98.5
275	394	0.4	105,666	98.9
276	275	0.3	105,941	99.1
277	279	0.3	106,220	99.4
279	188	0.2	106,408	99.6
280	194	0.2	106,602	99.7
281	96	0.1	106,698	99.8
282	83	0.1	106,781	99.9
284	44	0.0	106,825	99.9
285	38	0.0	106,863	100.0
288	6	0.0	106,869	100.0
291	11	0.0	106,880	100.0

N-COUNT = 106,880 MEAN = 219.2514 STANDARD DEVIATION = 29.7916 SEM = 10.799

NOTE: These scale score frequencies consist of scores for 106,880 pupils including 203 students who took an alternate form due to a security breach. Scores for 7 students who took the Braille form and 118 students who took the large-print form are not included in these frequencies.

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